

# THE OTHER EGYPT

TRAVELS IN NO-MAN'S LAND

WAEEL T. ABED



Printed under the auspices of  
The Egyptian Ministry of Tourism,  
**Tourism Development Authority**



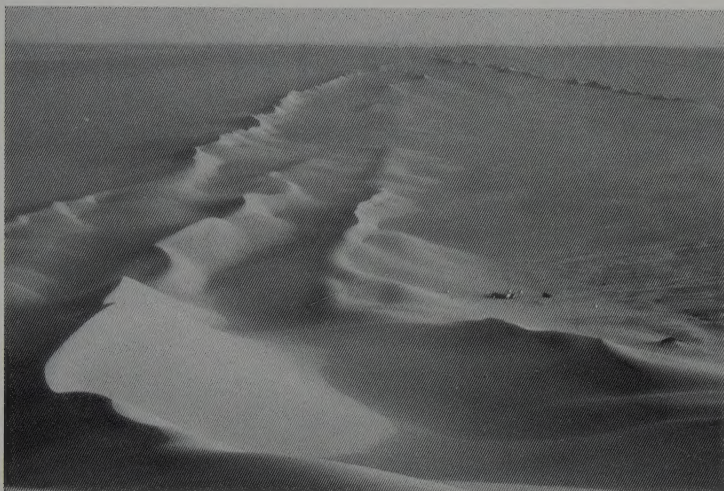












***I**t is a great ambition to fold a whole desert into a book. To watch the wind unearth one surface and cover another, to uncover layer after layer of experience and find substance underneath, is to gather knowledge beyond words. To interpret a desert's thoughts and put them down in words we all understand is a difficult task.*

*Y. J. C.*





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The information contained in this book is by no means a desert guide for travellers. The author does not recommend travelling to remote destinations mentioned in this book without the guidance of experienced professionals. However, readers willing to explore destinations mentioned in this book may wish to contact the following professionals for guidance, assistance and further information:

**Zarzora Expedition**  
**12b Mahmoud Azmi St., Zamalek, Cairo, Egypt. 11211**

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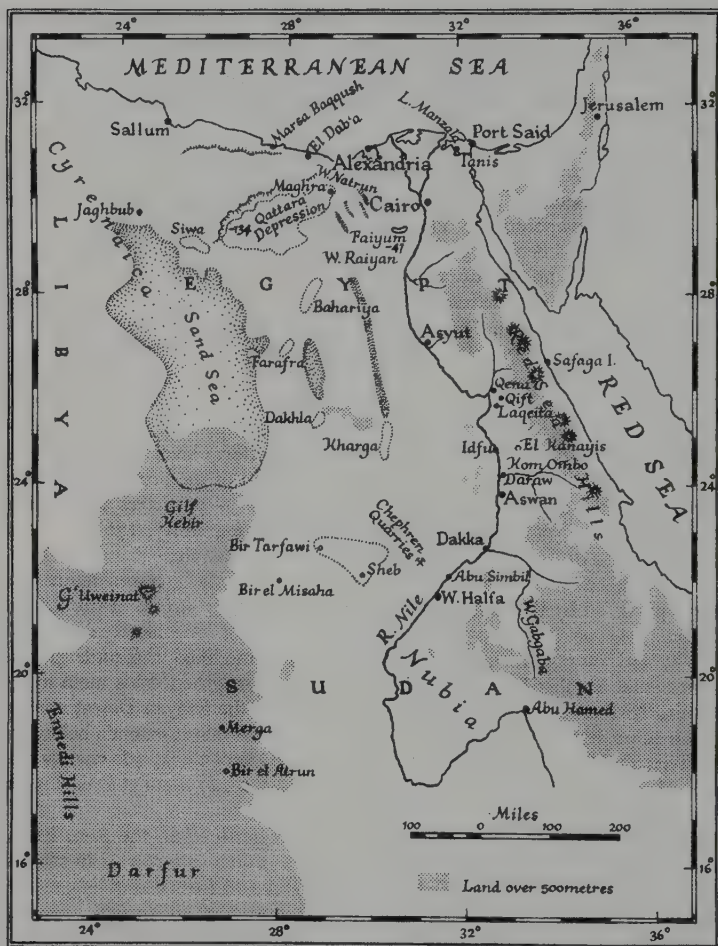


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*To **Tarek**, my father.*





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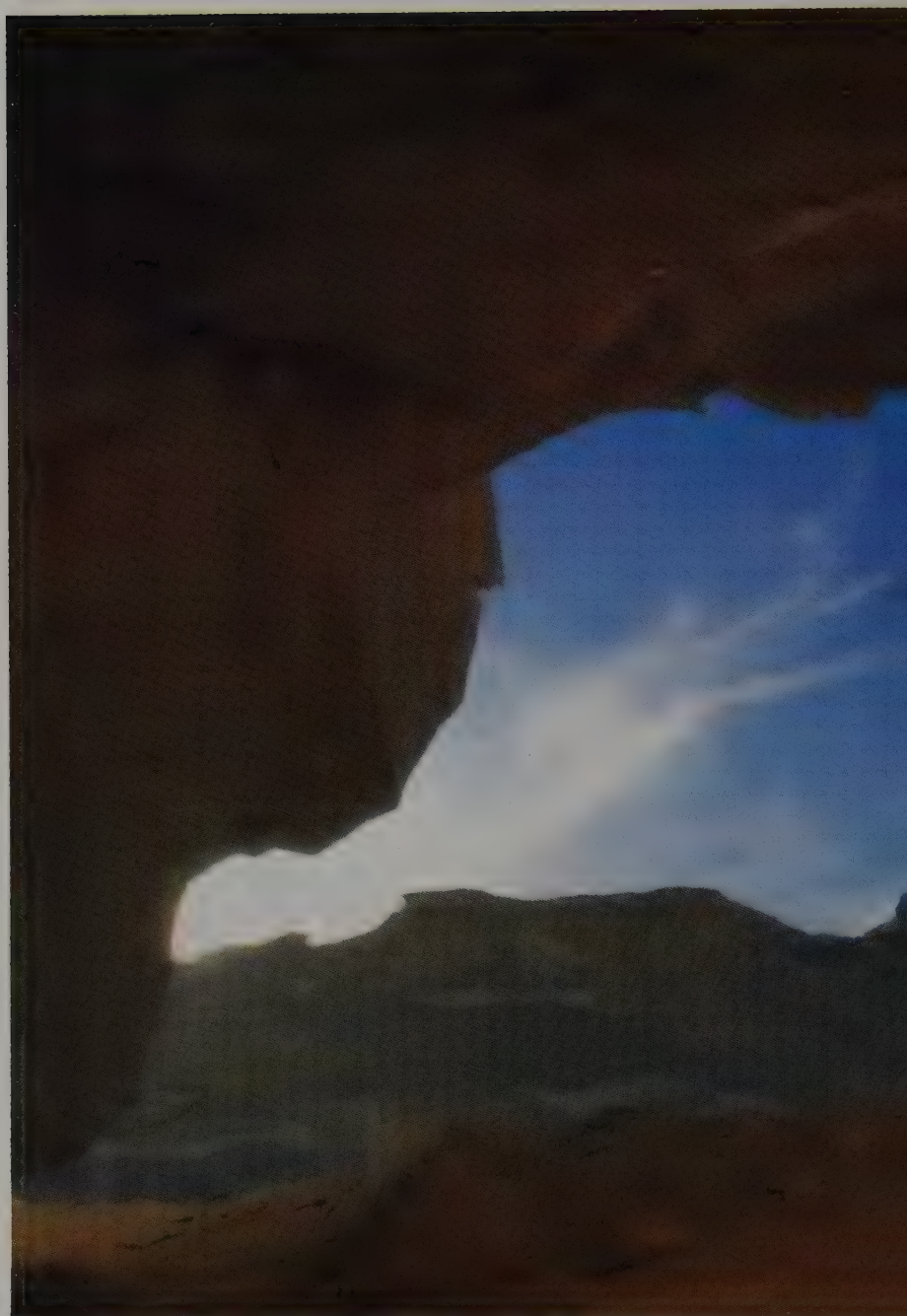
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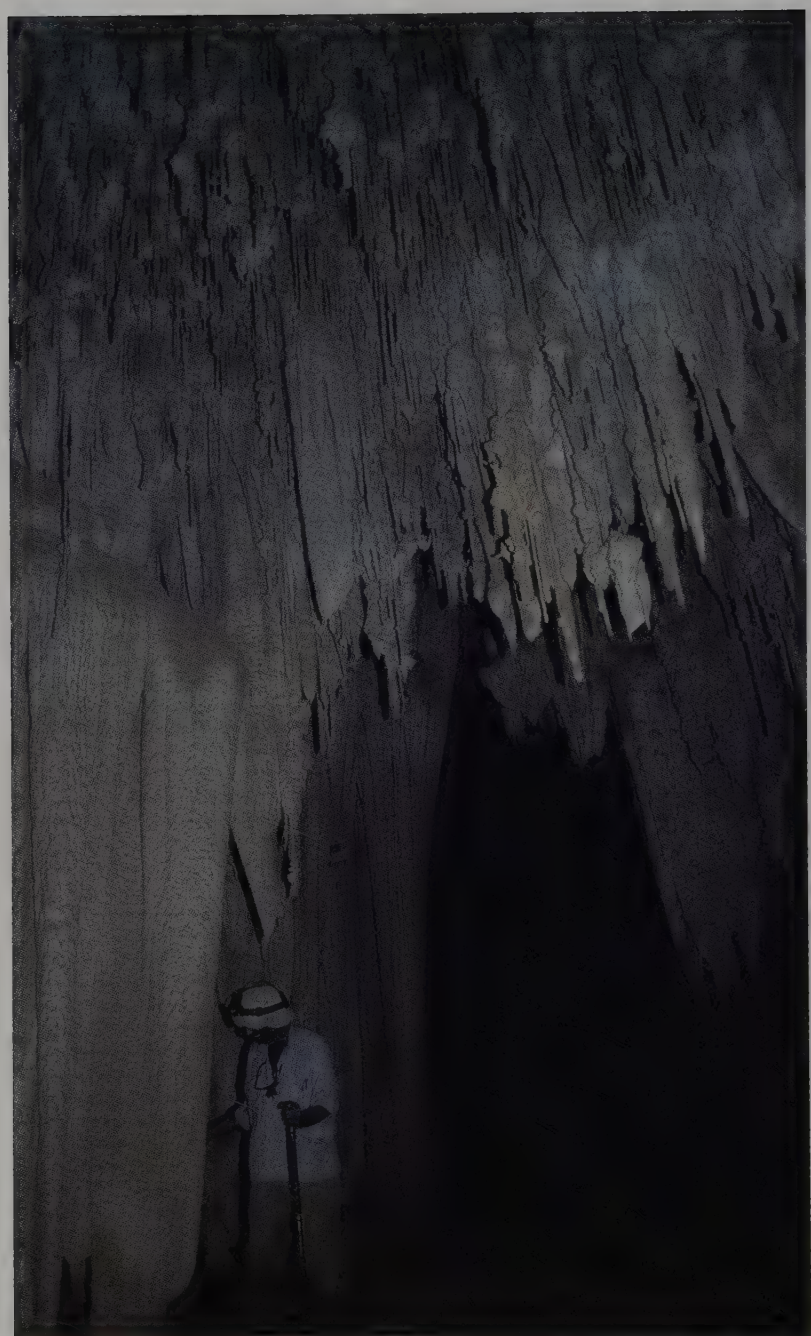
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## PREFACE

It is a great ambition to fold a whole desert into a book. To watch the wind unearth one surface and cover another, to uncover layer after layer of experience and find substance underneath, is to gather knowledge beyond words. To interpret a desert's thoughts and put them down in words we all understand is a difficult task.

To some, this book will seem to introduce the desert from a poetic perspective. In part it does, for a desert without spirit is dry. Indeed, not one of the legendary names engraved in the history of desert exploration--Rohlf's, Hassanein, Bagnold, Almasy and Kemal al-Din--could ignore the desert's influence on their souls. They became immortal as scientists and explorers because their achievements were based first on what I prefer to identify simply as 'a desert passion'.

Human travel, ancient settlements, evanescent trails and natural powers: this is the language I am to interpret in this book. These are the long been forgotten treasures of The Other Egypt.

This is a journey on papers, secure from risk and thirst. And yet, although it is much easier to read about the desert in the comfort of home, this narrative has not refined from heat and dust. Between these pages, you will see and taste the depths of a desert; the sand will still sting and the blazing sun will linger. Man's home is, after all, the horizon.

I have written as an amateur geographer and desert traveler who has gained a considerable knowledge of one of the least known regions on Earth, the Egyptian Sahara. I have chosen to travel as a geographer to benefit from a combination of place and time. With each succeeding trip into the desert, I extended my voyage through studies in geology and archaeology, astronomy and anthropology. Along with my personal experiences, these tools were what I needed to portray the Egyptian part of the Sahara.

And yet this book is no scientific work, nor is it a collection of purely personal memories. It contains information, scientific notes, definitions and explanations plus personal observations and experiences. I thought it might contribute to further research or motivate future journeys. If not, I would still hope that such glimpses are worth folding into a book. Beyond our urban horizons, the deserts stretch far and wide, willing to reward us as bountifully as our inclination to understand them.

These notes and experiences were collected over a decade of desert travel--reading, observing and listening to the Sinai Bedouin, to Berber herders roaming the stingy plains of the Libyan Desert, to soldiers based on isolated hills, to scientists of different fields and to the absolute silence. Above all, I benefited from the incomparable knowledge of my desert-brother and companion, Colonel Ahmed Al-Mestekawi, who planned and led all the journeys mentioned hereafter and to whom I am indebted for most of my desert experiences.

According to all scientific measurements, the deserts of Egypt are virgin lands, out of which, travelers and scientists returned with the same conclusion: that yet further multi-observations and research are needed, for there an immense treasure exists. Even the nomads who wandered in the desert for centuries and long knew of its secrets, whose knowledge is beyond our limits, admit that they know little.

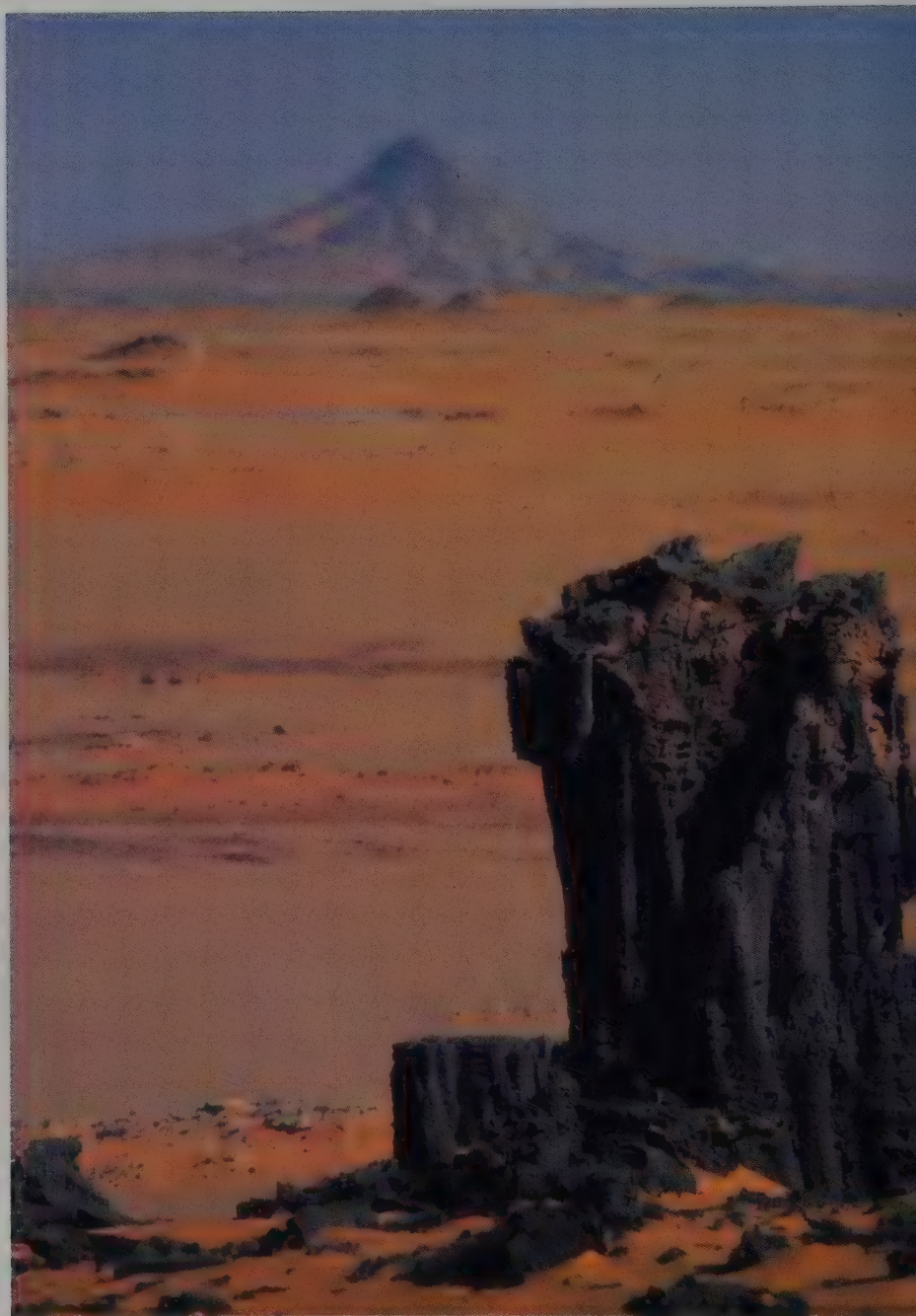
We first traveled as adventurers aiming to explore and rediscover the hidden pearls of Egypt's Sahara by seeing it with different eyes. Our ambitions grew and soon we hoped to document our home geography, to frame the one vast tract of unbroken country west of the Nile. We knew that the age of great explorations had ended decades ago. With satellite images and remote-sensing technology, nothing is left to discover in the sense of geographical features. The questions are no longer "where" and "what". Today, the foremost question has become "why". To take one step closer towards this answer, we converted to systematic observations during our documentary explorations. Little by little, we grew familiar with the far-off regions. The unearthly Gilf Kebir plateau, the obscure Uweinat region and the unsurveyed Sand Sea became a home for us.

Because few venture into such territories, the Egyptian government entrusted us to lead a surveying program on behalf of the Egyptian Environmental Affairs Agency (EEAA). We traveled in a series of expeditions to identify, examine and evaluate the desert's most outstanding natural resources. The objective was to determine the feasibility, importance, priority and potential benefits of the protection of these resources as a component of Egypt's Protected Areas Network.

However, I have always believed that a desert would lose its fascination if everything in it were known. No matter how much science may reveal, the desert will remain in most peoples' minds a place of accumulated sands, mysteries and legends, all camouflaged beneath a haze of mirage. In this book, I piece together some of that mirage.

Thus, through words on paper like ripples on sand, I have tried to mix my consciousness with science so as not to surrender a single gift or enjoyment the desert has offered me throughout the years. Towards understanding the personality of a region, we can not only depend on scientific materials; we must reach out for the spirit of the place and be able to unveil its soul.

I have always seen the desert as a museum displaying nature for those who believe in the importance of desert-land to humankind. The desert is a living sculpture created by powers to be studied; it is metrically organized by the wind and dyed by the sun, forming features to be enjoyed. Later on the knowledge will come.

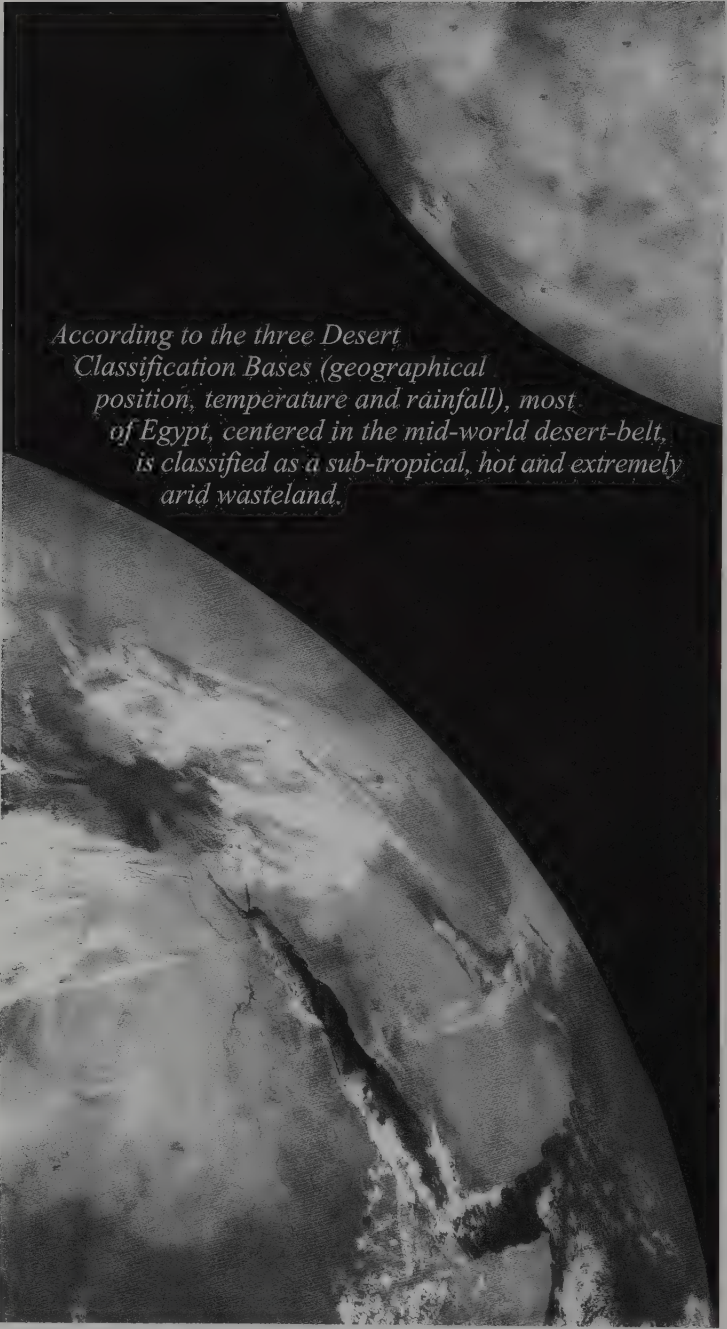








# **THE OTHER EGYPT**



*According to the three Desert  
Classification Bases (geographical  
position, temperature and rainfall), most  
of Egypt, centered in the mid-world desert-belt,  
is classified as a sub-tropical, hot and extremely  
arid wasteland.*

# THE EGYPTIAN SAHARA

## A BIRD'S EYE VIEW

The land of Egypt assumes the form of a square that occupies one million square kilometers in the northeastern corner of Africa. The Nile valley splits this territory from north to south for as long as 1000 km. In the east, the Arabian Desert separates the Nile from the Red Sea and further north, the Sinai Desert connects Egypt with the Asian continent. These two deserts together with the Nile valley form one third of the total land-mass of Egypt. The rest of the country lies to the west of the Nile, penetrating into the interior of the world's largest desert, the Sahara.

The Sahara is a vast area roughly equal to that of the United States. It consists of nine million square kilometers of mountain ranges, rocky plateaus, gravelly plains and sandy wastes, all divided into several regions, the largest of which is the great Libyan Desert. In and of itself, the great Libyan Desert totals an area of 1.5 million sq/km, or more than one-fifth of northern Africa. This triangular shaped waste includes large portions of western Egypt, eastern Libya and northern Sudan. In Egypt alone, it encompasses almost 681.000 sq/km, or more than two-thirds of the country. Totalling the size of France, only 2% of the Egyptian population lives within this desert. The present desert-dwellers are chiefly of Berber origin and migrant Bedouin from Arabia. They no longer live as nomads but have settled along the moist edges of this hostile desert and in scattered, dusty green oases.



This *No Man's Land* that I call *The Other Egypt* is wedged between the Nile and Libya and has an average width of 650 km. Its northern limits are lapped by the waves of the Mediterranean Sea. In the south, one desert merges into another in such a way that nothing separates Egypt from the Sudan, but the imaginary latitude of 22° N that extends endlessly through the vast plain of the Great Selimah Sand Sheet. Within these boundaries and beneath the ever-shifting sands lies a magnificent history. Out of this mirage legends arose.

The history of our knowledge of the Egyptian Sahara is surprisingly young. While most of the Egyptian deserts appeared with distinct features for the first time on the maps in the thirties of this century, these wastes contain areas that are still being discovered today. Apart from the scattered oases and a web of ancient caravan routes connecting them to the rest of the world, nothing was known of this *terra incognita*. The inhabitants of the surrounding oases have always believed the desert to be an empty space ruled by Jinn.



*Ismail Pasha (1830 - 1896), the Khedive of Egypt  
who sponsored the first geographical explorations in the Libyan Desert.*

Our modern knowledge of this immense wilderness began with the celebrated 1874 Expedition by Rohlfs. Sponsored by the Khedive of Egypt and led by the German explorer Gerhard Rohlfs,\* the expedition laid the foundation for modern research in the Libyan Desert.

---

\* Much like other European explorers (G. Nachtigal, J. Davidson and J. Richardson), Rohlfs came to the Sahara in 1862. He traveled large tracts of Algeria, Libya and Morocco before arriving to Egypt in 1870.

Joined by some of the best scientists of his time, Rohlfs traversed vast areas between the Nile and the Oasis of Kufra and returned with valuable knowledge of the desert's geography, botany and archaeology. The expedition's map and records of his companions (K.V. Zittel, W. Jordan, P. Ascherson and others) contributed substantially to further discovery and scientific exploration in the entire Libyan Desert.

With such records in hand, twentieth century explorers were able to advance further, step by step, into the interior of the unknown. In 1923, the Sheikh of explorers, Sir Ahmed Hassanein, followed Rohlfs' 1879 route to Kufra, advanced farther south and explored the lost oases of Arkenu and Uweinat. In 1926, the Prince of Egypt, Kemal al-Din Hussein, ventured towards Rohlfs' cairn in the Great Sand Sea and continued southwestwards to Uweinat, a journey during which he made his celebrated discovery of the Gilf Kebir Plateau. Even Bagnold's party benefited from Rohlfs' landmark discoveries, penetrating further than anyone before into the depths of the Great Sand Sea.

In the fifty years after the 1874 expedition, most of the desert west of the Nile was traversed and the blank spaces on the map of Egypt were progressively filled. Although the interior regions of some inaccessible parts bore the inscription "unsurveyed", they were no longer unknown. Yet interest in the desert waned and most exploratory expeditions ceased by the outbreak of World War II. We were to continue them half a century later.

In 1990's, we established a club for desert travelers and named it The Zarzora Expedition. Our philosophy was simple: in a true desert, the sands of time travel over undisclosed secrets, cover one civilization and unveil another. Buried mysteries return to life and someone has to be there to witness the reincarnation before the knowledge is submerged once more. No matter how strong our impression that little was left to discover, we started our series of exploring expeditions aiming for the legendary lost oasis of Zarzora, a symbol of a mystery yet to be discovered.

That is how we began a new period of desert exploration.



*Sheer cliffs, massive plateaus, depressions and sand dunes; these are the dominant geographic features west of the Nile.*

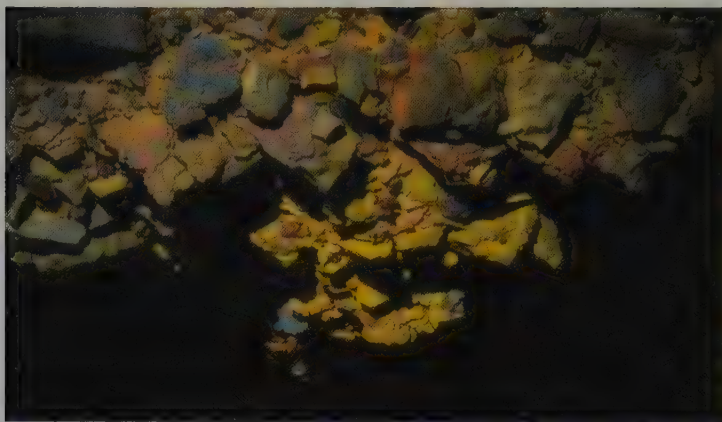




## THE LAND

Three great plateaus form the surface of the Egyptian Sahara. Separated by bowl-shaped and trench-like depressions, the geology and topography of Egypt shows that the table-land declines in height and age from the elevated old south to a younger, low-level north.

In the far south, the Palaeozoic Sandstone plateau rises 1000m above sea-level. Including the ring-complex of Gebel Uweinat, the Great Selimah Sand Sheet and the Gilf Kebir plateau, this 560-230 million-year-old stratum forms the whole southern desert. Towards the north, the plateau tapers off in the direction of a vast sandy plain that merges softly into the transverse depression of Dakhla and the longitudinal oasis of Kharga.



*Details of laminated sandstone,  
the hematitic fragile layers that carpet large surfaces east of Gilf Kebir.*

At this point, the Eocene Limestone plateau rises and forms the central desert. Originating at Dakhla and Kharga in the south, it slides from 540 m at its highest point to an average of 50 m below sea level in the Qattara depression some 400 km to the north. This rough eroded massive is bounded by the living Nile in the east and the desolate dunes of the Great Sand Sea in the west. Like a piece of Gruyere, the limestone surface of this plateau is perforated by the giant depressions of Farafra, Baharia and Fayoum, and by dozens of minor depressions (Rayyan, Arag, Sitra and others).



The Northern Miocene plateau braces the limestone country between Qattara and the Mediterranean, stretching for some 600km between the Delta in the east and the plateau of Cerynaica in the west. Also known as the Diffa Plateau, the table-land slopes gradually from 220m along the cliffs of the Qattara depression to dive beneath the waves of the Mediterranean in the north.



*At the junction of two major bedrock, depressions form by the agencies of ground deformations, fractures and water and wind erosion.*

The surface landscape of the Egyptian Sahara is almost uniform in character. With the exception of the Uweinat/Gilf Kebir region, most of the desert consists of bevelled windswept flats. In the absence of precipitation, the surface is eroded by low-moving winds that chisel at the rocks, deepen hollows and uncover secrets. Possibly in their rawest form on the planet, the wind, sand and sun reign as the desert's basic elements.

## THE CLIMATE

The Egyptian Sahara lies at the center of the mid-world desert-belt that stretches from central Asia in the east to the Atlantic Ocean in the west. With its southwestern corner comprising the heart of this arid-belt, the Egyptian Sahara extends between

latitudes 22° and 32° N, or Egypt's southern border and Africa's northern coast. This area falls within north Africa's sub-tropical zone, with its warm winters and hot summers.

The desert climate depends mainly on the amount of moisture carried inland. In the north, the desert fringe is influenced by the climatic activities of the Mediterranean Sea. This effect abates quickly towards the bone-dry desert interior. Like most arid regions, the whole Egyptian Sahara witnesses a severe daily drop in temperature with its southern tracts relatively warmer than the north. Nevertheless, in areas of high altitude such as Uweinat and Gilf Kebir (over 1000m above sea level) the temperature can drop to -2° C as we recorded in February 1997. Conversely, the highest temperature ever recorded in the Libyan Desert, at Azizeya in 195-, was 57° C.



*In the heart of a 'Khamaseen' storm,  
our convoy navigates a sea of darkness towards Sugar-Loaf Hill.*

In Spring, the dry *Khamaseen* wind blusters from the Sudan and covers the sky with a thick cloud of reddish dust for a maximum of five days. Some say that *Khamaseen* comes from the Arabic word *Khamisa* which means five. These storms usually last no more than three days, though they can be of such intensity that it sometimes takes up to two days for the dust to clear. Others claim that the name was inspired by the fifty-day period (*khamseen* means fifty) when this storm is expected.

Equal in strength to the suffocating *Khamaseen* is the western wind which the Bedouin call *Ajajj*. Unlike the *Khamaseen*,

which usually blows between March and May, the *Ajaij* is unpredictable and might blow even on a clear summer day, or perhaps even in winter. As we recorded on several occasions, it doesn't cause a drop in temperature, but can carry the desert's surface sand up to a meter in height and haul it eastwards for long distances.

*Rih bu Muraifiq* or the "escorting wind" is the name that the Bedouin have given to the third common wind pattern of the region. True to its name, this wind rotates with the sun as it arcs its way across the sky from dawn to dusk. It begins after sunrise from the east, and as the Earth turns in its orbit *Rih bu Muraifiq* turns in the direction of the sun until it blows from the west at sunset. It dies down completely by nightfall.



*A hearty 'Agram' shrub resisting the blasts of 'Rih-Bu-Muraifiq' and the drought of the Great Sand Sea.*

Our journeys' records indicate that all storms are usually followed by the common northwestern breeze (*Al-Bahari*), though even this breeze, on rare occasions, rises abruptly, with severe violence and an immense drop in temperature. These wind patterns have been our constant hosts, sometimes clement and sometimes pitiless, throughout our travels into the desert

interior. Without a solid understanding of their movements, and an equally thorough sense of surface type, our trips in the desert would have been impossible.

Rain is a rare phenomenon in the Egyptian Sahara. While the northern frontiers receive a fair amount of precipitation every second winter, the interior of the desert endures, on average, ten-year cyclical droughts. Farther south towards the rectangular zone of Gilf Kebir/Uweinat, it is said that the desert remains dry for as long as 20 unceasing years. In May and October 1997, however, we saw rain in east and southeast Gilf Kebir, the only two times we witnessed rain in a decade of desert travel.

## DESERT FLORA

Excluding the Sand Sea, the Great Selimah Sand Sheet and most of the Gilf Kebir plateau, the surface of the Egyptian Sahara hosts some "1100 plant species" (V. Tackholm 1974). The majority of these plants exist in the oases and along the narrow strip near the Mediterranean shore. Outside the oases' depressions and far into the interior, the desert seems barren.



*The northern wind, 'Al-Bahari', carries the seeds southwards and deposits them in the least likely places one would expect a plant to grow.*



The extreme rarity of rainfall together with the absence of both underground aquifers and proper topsoil prevent the burgeoning of any sort of plant cover. On puny patches of sand, however, dwarf species and stunted bushes adapt and survive in this harsh environment. These Xerophytic plants depend entirely on stingy clouds and infrequent rain storms.



*Absorbing water from the moist air of the Qattara Depression this perennial may blossom for a few days each year.*

"Despite its aridity, today's desert remains very much alive. Yellow-flowered *Acacia* groves, mauve-flowered *Tamarix* shrubs, date palms, common reeds, *Juncus* rushes and Halfa grass, are all common to the desert, particularly around the wetlands of the Qattara depression [in the north]. Salt marshes typically harbor *Halocenemum*, *Sarcocornia* and [purple-flowered] *limoniastrum* shrubs, in addition to herbaceous perennials such as the *Cressa* and *Aeluropus*. *Acacia* and white-flowered *Arkenu* trees, and such hardy shrubs as the mauve-flowered *Zilla*, pink *Fagonia* and *Monsonia* and yellow *Pulicaria*, can be found even in the more arid wadis of the rocky plateau of the Gilf Kebir, where a surprising 51 flowering plants have been recorded."\*

As scarce as it is, rain nevertheless transforms the desert landscape for a few days. Soon after rain, ephemeral gardens carpet the barren floor. Their whole life cycle can be as short as few days.

---

\* L. Boulos, *Adreere Amellal Desert Ecolodge*, 1998.



*Behavioral, structural and pysiological adaptaions enable many mammal species, such as this 'Sand Fox', to survive the hostile environment of arid lands.*

## DESERT FAUNA

Life seems improbable in the hostile vastness of the Egyptian Sahara. As incredulous as it may seem, the surprising ecosystem stability that once hosted a large number of species still supports a meager wildlife existence in various localities. However, as a result of increasing desertification and human activities, various species have become extinct.



*Life is on the edge in many parts of the desert.*

*Remains of an enormous Acacia tree and the horns of the endangered Moufflon.*

"Desert Mammals are mostly nocturnal, preferring to escape the heat of the day. Gerbils, jerds and jerboas sneak out of their burrows at night in search of seeds, sometimes falling prey to the roden-eating sand fox and Libyan wild cat. The desert hedgehog is occasionally seen foraging for insects. Desert hare, prey to the now rare Saharan cheetah; the predators of the area, known for its large ears and endearing eyes; the Dorcas gazelle and the slender-horned gazelle; and the desert jackal and striped hyena, are all resident of the vast [Egyptian sahara]."\*

Unlike other Saharan countries, the gazelle population in Egypt's desert seems promising. Surprisingly, rare animals do inhabit the remote and extremely arid highlands of Gifl Kebir/Uweinat. Large mammals like the Waddan or Barbary Sheep *Ammotragus lervia* have long managed to occasionally survive the extended periods of drought. Unfortunately, even this hearty creature is nearing extinction in the Egyptian Sahara.

---

\* M. Saleh, *Glimpses Into the Western Desert*, EQI, 1988.



# THE OASES

## SIWA: ITS HISTORY AND PEOPLE

Siwa deserves to be called the oasis of history. It was first mentioned more than two thousand years ago in the records of the Pharaohs, during the Twenty-sixth Dynasty (663-525 B.C.). The ancient Egyptians named it Jupiter Ammon, yet little is known of this period when the Temple of the Oracle was built and the Siwans who worshipped there were called Ammonians. In 450 B.C., Siwa appeared again, this time in Herodotus' history of the Persian invasion of Egypt. After conquering the inhabitants of the Nile valley in 525 B.C., the Persian king Cambyses, dispatched his troops to destroy the Siwan Oracle. The entire Persian army, Herodotus reports, was lost in a sandstorm on its way to the oasis.

Two centuries later in 332/1 B.C., Alexander the Great came to Siwa to consult the diviners of the Oracle of Zeus-Ammon. The priests there prophetically told him that he would conquer the world. They also pronounced Alexander to be the son of god and crowned him so atop the hill of Aghurmi where the ruins of the Temple still overlook the oasis.

During the Greco-Roman period, Siwa like most of the other Egyptian oases flourished and reached its densest population. The inhabitants of that time were builders, farmers, herders and traders. The Romans, who named Siwa Ammonium, established trade routes connecting the oasis with Paraetionium (Mersa Matruh) on the Mediterranean. They dug wells and secured other roads to the neighboring oases of Qara, Arag, Watia, Bahrain and Baharia.





Traversed even today, these caravan routes pass by wells that have long since dried and through oases that are no longer fertile.

When the Arabs, the "men of the desert," conquered North Africa, they avoided the oases and their harsh way of life. They neglected the desert and settled along the Nile where crops were abundant or near the coasts with their prosperous trade links. For centuries, Siwa was forgotten by the Arabs. It only appeared in the monographs of Arab geographers such as Al-Idrisi (1100-1166 A.D.), Ibn Jubayr (1145-1217 A.D.) and Al-Maqrizi (1421-? A.D.) who visited Siwa in the course of their worldwide travels and referred to it by the name of Santariah. During this stretch of history, the Siwans, who call themselves Itadim-n-Isiwan (meaning the people of Siwa), were left to face their destiny, completely isolated from and neglected by the flourishing civilization along the Nile valley.

By 1200 A.D., the Siwan population was reduced to some forty men. Threatened by poverty, disease and marauding raiders of



*Shali, the old "town" of Siwa. Some 800 years ago the Siwans built this fortress to protect themselves from the desert-raiders*

uncertain origin, the Siwans decided to abandon the unprotected hill of Aghurmi where they had always lived. They laid the foundations of their new fortress at the foot of Gebel al-Gharbiyin. By sheer necessity, the Siwans introduced a new form of architecture to the Egyptian oases in the form of the inaccessible town of Shali. Built of clay and chunks of stone

piled high to form ramparts, and roofed by olive-wood and split palm-logs, Shali became an impregnable fortress-city. Siwans lived there for centuries, poor in money, clothing, and every other commodity except dates and olives. An incredible 600.000 palm trees grow in Siwa; each Spring caravans of hundreds of camels used to carry thousands of kilos of dates out of the oasis to the rest of Egypt and the Sahara. The camels were rented from Libyan tribesmen of neighboring oases because the Siwans, to this day, own no camels themselves--said because of a gray fly that prevents them from thriving.

As the population of Siwa grew both in number and wealth, a civil war persisted for years between the oasis' eastern and western tribes. Despite internecine warfare, the tribes nevertheless remained independent of Egypt's central government until 1820 when Muhamed Ali Pasha's troops marched in to remind them that Siwa is yet a part of Egypt. Siwa suffered again in 1926 when it was dissected from its sister oasis, Al-Jaghbub, by the new Egypto-Libyan border arrangements. Since then, all of Siwa's official activities have been directed towards the Egypt's Mediterranean coast, its only link to the outside world.

Change arrives slowly to such remote areas. The oasis' social fabric and economy still reflect much of its early history. The Siwans have always tended their abundant date groves and gardens. Fishing the small fish that abound in their lakes, trapping birds and lizards, threshing grain, pressing olive oil, and collecting salt are the basic activities that have formed the oasis' fragile economy for centuries. Food is cultivated using ancient techniques; pottery is fired in ovens used by their ancestors, and artesian wells are still dug the same way.

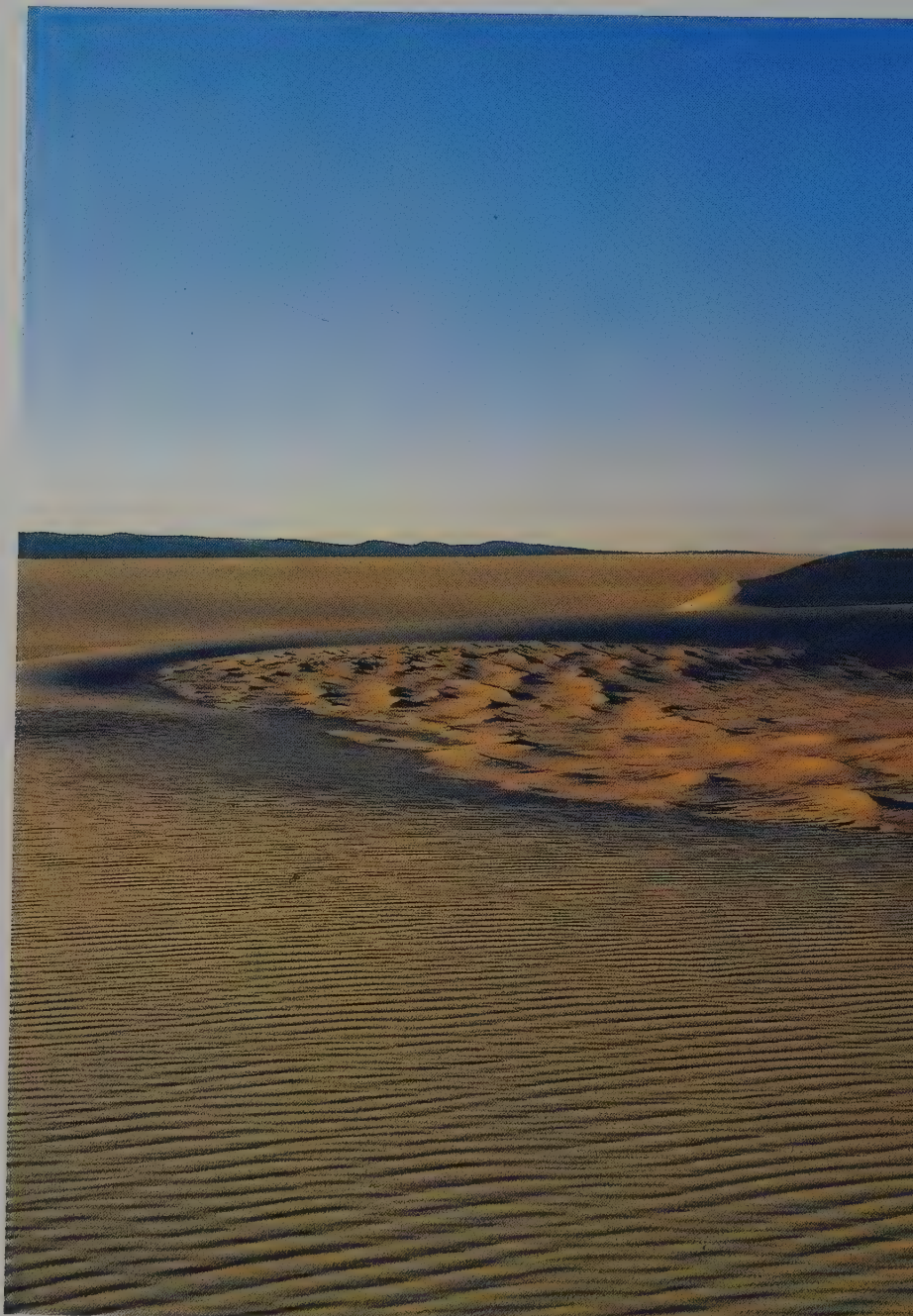
For most of our journeys, Siwa was the last inhabited place we would see for up to a month. It was the threshold where history's last whispers could still be heard. From this point on, the sky, sand, wind and sun would usher us on to sites that had remained silent for decades and even centuries. Remarkably, we discovered that the desert never stops speaking to those who know how to listen, to those who travel sincerely into *No Man's Land*.







# **NO-MAN'S LAND**



*...and the land outstretched before us, immense and mighty in its solitude.*







*The sands of time travel over undisclosed secrets, cover one civilization and unveil another. Buried mysteries return to life and someone has to be there to witness the reincarnation before the knowledge is submured once more.*



# THE GREAT SAND SEA

## CONQUEST OF THE UNKNOWN

### Siwa Oasis, 1874

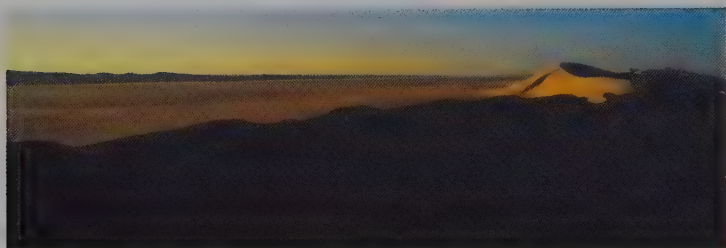
A caravan in agony staggered down the dunes. Herders on the outskirts of the placid oasis rushed to spread the news. Some hundred camels mounted by men at the point of death were approaching from the unknown. The rumor stormed the oasis and officials and Siwans came out to see for themselves. There they met Gerhard Rohlfs, one of the last representatives of a generation of explorers whose motive for venturing into unknown territories was adventure.

Until the late 19th century, no one knew what lay behind the sands south of Siwa or west of Dakhla and Farafra. That these accumulations are connected and create an ever-expanding ocean of sand was never confirmed until the arrival of Rohlfs' Expedition in Siwa on the 20th of February.



In December 1873, Ismail Pasha, the Khedive of Egypt, launched the first-ever scientific expedition to the Libyan Desert and charged Rohlfs with its command. The objective was to establish a route connecting Egyptian Dakhla to the Libyan oasis of Kufra or, in other

words, to reincarnate an ancient caravan route that -- legends claimed -- existed through the dunes. Because such royal patronage offered an opportunity to carry out rigorous scientific research, Rohlfs sought the service of several recognized scientists: the paleontologist Prof. Karl von Zittel; the geographer Dr. Wilhelm Jordan; Paul Ascheron, the botanist; and Georg Schweinfurth, the first president of the Egyptian Geographical Society. On January 13th, they set out to the unknown, marched west of Dakhla and disappeared into a horizon of dunes. They carried a seventeen-day supply of water. The caravan surfaced thirty-six days later in Siwa, some 600 kilometers to the north of their original route.



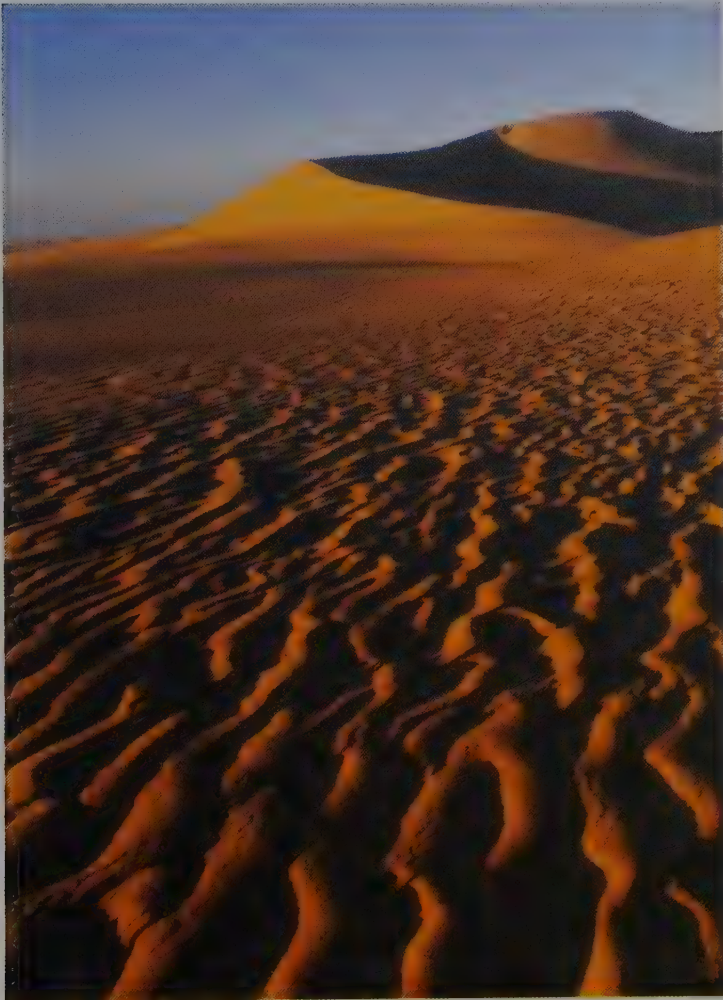
*A world apart where one disappears into horizons of dunes.*

Miraculously, Rohlfs survived to tell the story. "The outlook was gloomy...", he wrote. "... It was quite impossible to advance westwards, for at distance of two to four kilometers a sand ridge followed the other... If we had tried to go forward due west we should probably on the first day have got 20 kilometers; on the second day we might have gone the same distance; on the third we should have certainly not gone more than 15 kilometers, and on the fourth day perhaps ten. This would have been all that could have been asked of the camels. We should then have been 65 kilometers farther west - but what after? The beasts might have been able to do another 50 kilometers after resting several days, but that would have been all. And how were we to come back? ...As our reconnoitering had shown the direction of the dunes to be always the same, we thought we would try to advance northwards or N/NW following their line. We should perhaps after a few days journey reach the end of the sandy region and could then anyhow take a westerly course. It might be possible to reach Siwa by some yet unknown road."\*

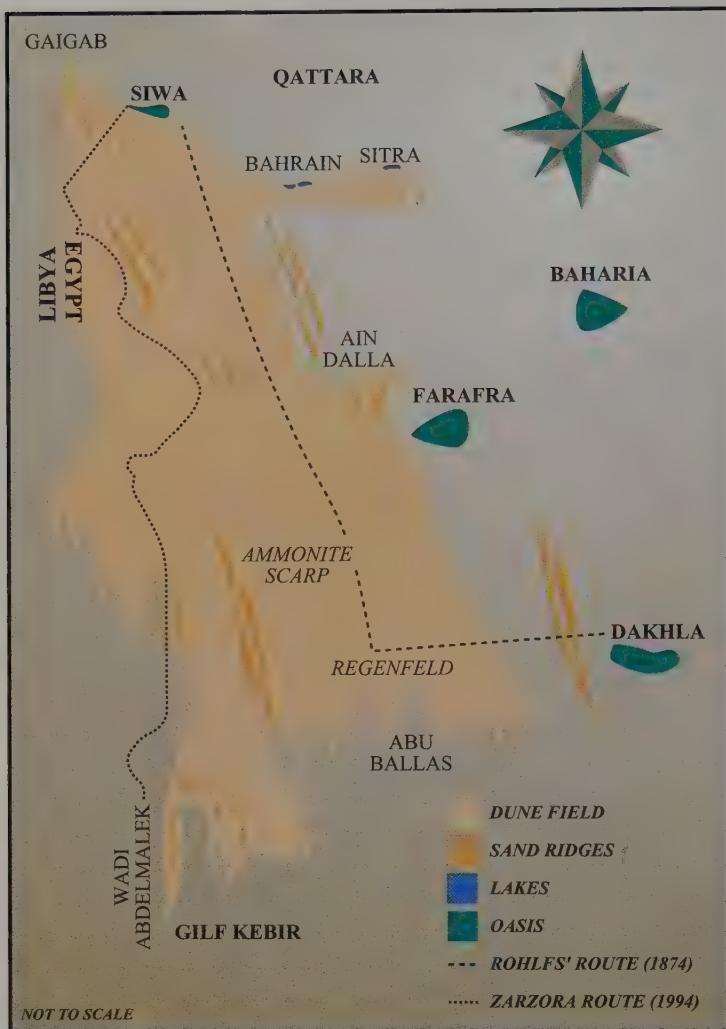
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\* *Gerhard Rohlfs, Drei Monate in der libyschen Wüste, Cassel, 1875.*

Some 160 km from Dakhla, Rohlfs changed direction at a point he named "Regenfeld" or "rain-field" after an unusually rare rain storm that lasted two days and helped them replenish their water supply. Day after day, the caravan filed through lifeless country. All they saw were row after row of interminable dune lines that blocked any attempt to move east or west. They found no water, not even a shrub for their camels to graze on until they reached Siwa, the Island of the Blest. That was history's first reference to what Rohlfs called "The Great Sand Sea".



*A dune country larger than England:  
desolate, pitiless and hazardous, yet equally inviting.*



*As it appears on the map, the Great Sand Sea is a desert in its own right. Spanning the 600 km between Siwa in the north and the Gilf Kebir plateau in the south, the Sand Sea forms a natural and forbidding barrier between Egypt and Libya. From west to east, this barren land averages 250 km in width though it reaches 400 km in the south. Nothing lives here but the wind, and nothing moves here but the sand.*



## SAILING A SEA OF SANDS

To witness something people would not normally see, we sailed the Great Sand Sea for the first time in October 1994. Our first objective was simply to be there, to look around and get a feel for the place. Our second task was geographical: we hoped to reach the Gilf Kebir plateau by driving due south from Siwa. The two motives led us to a journey that has rarely been attempted in the history of desert travel. We knew that if we couldn't reach the plateau, we would at least examine parts of the dune-field and photograph sands that no one had ever seen.

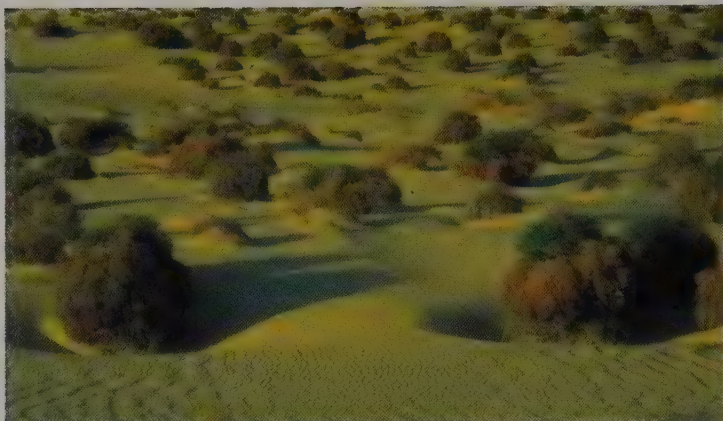
The plan was to cross the Sand Sea to Wadi Abdel Malik. From there we would move along the western cliffs of the Gilf Kebir plateau to its southernmost tip before returning to Dakhla via Abu Ballas. This 2400 kilometer waterless route was planned and outfitted by the expedition's leader, Col. Ahmed Al-Mestekawi. At his request, I joined the mission to document the journey as carefully as possible.

We arrived in Siwa on a cloudy winter afternoon. Part of our group went for a gas refill and essential shopping. We knew that Siwa was the last living spot we would encounter before venturing into the dead world Rohlfs had announced one hundred twenty years earlier. I bought a "*Guide to the Oases*" and flipped casually through the pages. A few sentences on the Sand Sea caught my attention: "The biggest and the most dangerous dune field in the world... Entire armies have disappeared in the desolate expanse... To this day it remains one of the great unexplored areas on earth. ...People still don't go there. It is one of the earth's last frontiers and will probably remain so for years to come."\* I turned and congratulated Mestekawi on his initiative. He only smiled.

At a tourist cafe near the ruins of abandoned Shali we met the renowned desert expert, Samir Lama. Lama, who was on his way to Farafra, has guided many expeditions throughout the Sahara. The coincidence was not to be missed. We took advantage of the chance meeting to query Lama about our journey for no one else understood what we were talking about. People simply thought that we were out of our mind.

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\* C. Vivian, *A Guide to the Oases*, 1990, pp. 10-12.



*"In a hollow of sand grow a few sprigs of grass. It's absurd. The grass has hardly germinated before it's yellowed. But life is still there, like a promise or a goodbye."\**

We took Lama to our lorry. It was loaded with 14 barrels of gasoline, 4 barrels of water, 600 bottles of drinking water, spare parts, a generator, a compressor and 8 boxes of food supplies, each weighing at least 100 kg. Lama thought we were exceeding the limit by trying to cross the dunes with such an overloaded machine. His tone carried a warning that we were doing something wrong. Mestekawi must have miscalculated, but it was too late to turn back.

Many Siwan children gathered around us, staring curiously at the convoy of four turbo diesel Toyota Land Cruisers and the bulky Liaz truck. As the wheels turned, I looked at them and at the other men who had gathered to watch us leave. I wondered how long would it take us to return to such a living place. Between here and Dakhla lay some 15 days of naught.

The green of Siwa faded quickly as we headed west towards the sands. We crossed several bushy spots before the dunes began to tower higher and higher until we were at the foot of a giant wave of sand that blocked the western sky. We stopped to reduce the tire pressure, and I climbed the dune to take one look back at the oasis. Behind was a panoramic view of palm trees, Lake Siwa and bucolic tranquillity; ahead was the first basin of an enormous reservoir of gilded sand. I had often dreamt of this spot. Now, at the edge of my wish-land, my dream faded into doubt.

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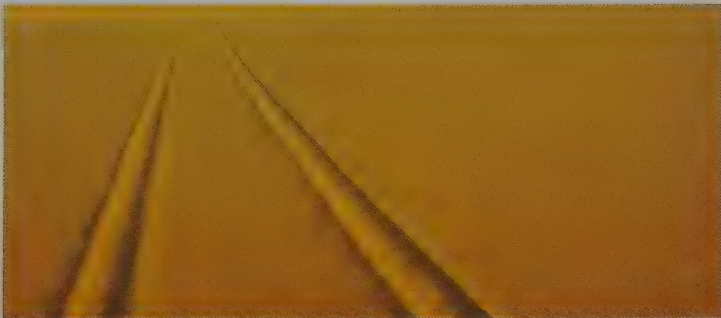
\* Heinz Weisz.

There was no way back. I concentrated on Mestekawi's experience. "He should know better." I walked back down to find the cars ready to sail.

We followed a faint track to the other end of the basin and climbed to the summit of the second dune. The next basin looked exactly like the one we had just passed, as if the scenery had been re-wound. We headed west but the sand was soft and the cars foundered several times. Digging out the cars was easy compared to the lorry which weighed many times more.



By dusk, we had advanced 45 km west-southwest. When the lorry got badly stuck for the third time, we decided to leave it till morning. Although the dunes surrounded our camp, many limestone rock formations jutted through the sands. Some were eroded and others were semi-submerged beneath the rippled earth. I installed my tent on a patch of hard sand. Scattered about were sea shells and a variety of marine fossils deposited by an ocean that withdrew 24 million years ago. On the eastern slopes of the dunes, shrubs of various sizes dotted the smooth surface. We collected some dry *Agram* roots for the camp's various needs.



*Our convoy embraced by naught (top).  
Adrift in a sea of sand (below). Soon the wind will come and our tracks will disappear.  
Nothing remains in this barren world.*

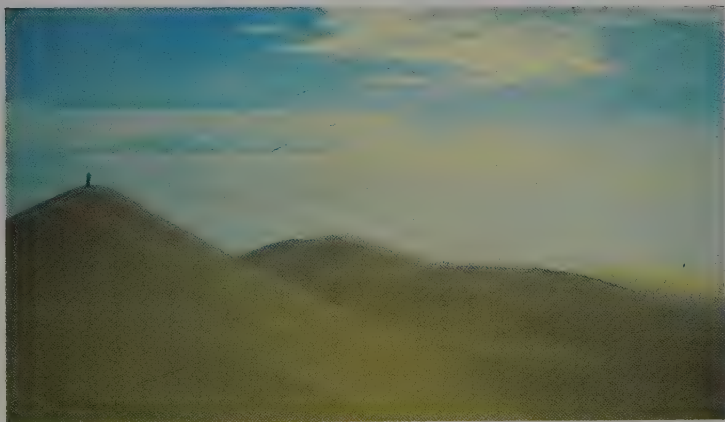
The temperature dropped as rapidly as the sun set and the sand cooled fast. A gentle breeze approached from the northeast, the direction of Siwa, whose lights cast a bright cloud in the sky. We spent the evening inspecting the map; the only feature inscribed on it were the words "The Great Sand Sea" stretched diagonally across the whole blank sheet. We concluded that Rohlfs' route must have been about 70 km farther east from our campsite. Amidst these dune embankments, it was easy to imagine how such sand breakers could cause a camel caravan to stray from its intended route. The silhouette of the bogged-in truck reminded me that we were not much better off than Rohlfs.

After some early morning excavating, the lorry was out and on firm ground. The convoy moved through a network of dunes, occasionally interrupted by rocky patches that relieved the monotony of the sand formations. We moved in single file. The leading jeep was the lightest of all our cars because it shouldered the responsibility of searching for the firmest surfaces and easiest passages through the dunes. The second car followed 500m behind and so on. This order allowed the following cars to avoid soft ground or to stop on a hard surface if the leading car got in trouble. We also used VHF radios to communicate with each other in case of emergency. Driving the leading car, Mestekawi's job was to decipher the blinding surface of shimmering quartz. Once the sun is high in the sky, identical golden swells were all we could see. There were no landmarks for reference on direction and no warning of soft sand or dangerous cuts in the dunes. So the leading car not only bore the burden of leadership, it also suffered the terrible first shocks of the treacherous sands. I learned that day never to trust the dunes.

The early explorers of dune-fields gave the dunes different names according to their shape. Whaleback dunes, as their name suggests, are gently sloping sand ridges with smooth rounded summits. They run particularly straight and may stretch up to hundreds of kilometers in length. When these are mounted by ranges of cascading, pyramid-shaped sand hills, the sand-barrier is called a crested dune. In general, any longitudinal crested dune is called a *Seif*, the Arabic word for sword.



The Sand Sea is a longitudinal field, with an infinite number of broad whalebacks and seifs stowed in a series of parallel rows. At some points seifs converge end to end, forming dune-lines that extend for as long as 150 kilometers. Between the crests undulating sands flood troughs and valleys of various widths. These sandy corridors slope gradually from east to west; now and then they are partially littered with dark flint or limestone outcroppings. Because the direction of the dune ridges follows the path of the prevailing northwestern wind, we always found ourselves forced to the southeast. To maintain a southerly course, we tried to go west whenever possible but our maneuvering was cloistered by confusing crests and liquid-soft patches of sand. Much like Rohlfs, we had only one choice: to follow the general direction of the dune-lines until they cease.



*Clouds astray over the sand sea. It may not rain here for a decade,  
yet beneath this ocean lies Egypt's grand water-reservoir.*

On that first morning, we found ourselves, quite by accident, at a point higher than any other. We could suddenly see as far as the horizon. The landscape was unlimited and unearthly. Instead of being forced into a valley, for once we had a choice to make. As the west looked depressingly difficult, Mestekawi didn't think for long: the flatness of the southeast and the patch of solid ground in the distance were too tempting to ignore.

So we slid down the slip-face of the dune into the eastern valley and accelerated towards its southern end. Speed was the only

way out for we had just passed a point of no return. Needless to say, that whole journey was full of points of no return. For the greater part of the Sand Sea, the drive is the destination.



*That whole journey was full of points of no return.*

But we miscalculated and all the cars sank deeply in that valley. The gravelly patch seemed far away and it took us three hours to exhume the lorry. Without it, we could not have advanced further. Although all the cars had two fuel tanks, we could not survive without the rest of the fuel and supplies. Like the camel to the Bedouin, it was our umbilical cord to civilization. Every time the lorry sank, it looked like the end of our journey.

It is almost impossible to decipher, from its appearance, what kind of sand surface lies ahead. At first, I thought that dark-colored grains cover the soft patches, but several digs convinced me that it takes an experienced eye to distinguish the liquid pools from the rest of the surrounding country. Fortunately, most of the soft patches we encountered were neither wide nor long. At least we never had to worry about quicksand which -- I believe -- does not exist in the Sand Sea.

Later that day, we came upon a field of petrified wood. Flint implements were also scattered nearby. These were remnants of a bygone geological epoch and a long vanished prehistoric occupation. Everywhere in the Sand Sea, there is evidence of

drastic climatic changes that took place during a more recent geological era. Indeed, the dunes' morphological evolution took place very rapidly in comparison to that of the surrounding rocks, and the region may even have been subjected to sand-filling since the last human settlement (6000 years ago?). This part of the Sand Sea was probably part of the Siwa-depression where other prehistoric settlements have been excavated. It is unlikely, however, that the implements are related to the petrified wood for most scholars agree that petrified wood is usually not found in the place it grew. What is surprising is that this evidence of early human presence and wet climates is clearly exposed and surprisingly undisturbed by sand or time.



*Bifacial hand-axes of prehistoric man,  
made of the dominant chert rocks that cover parts of the southern Sand Sea.*

On the second day, the complex dune-formations faded into a country of more rigidly parallel ranges that grew higher the more we advanced south. These configurations reminded me of the equally rigid formations of the Roman army: Both intimidate.

I realized that the character of the dune-field changes almost every fifty kilometers. The density of the crests, the height of the ridges, the presence of rocks, the color of the sand, the width of the troughs, and the length and direction of the ranges

changed almost imperceptibly. We were 150 km south-south-west of Siwa when the stony patches and gravel corridors disappeared entirely. But no matter how much the Sand Sea might change, in the end, our job always remained the same: get out of the car; smile number one; untie the sand-ladders; walk to the beached car; lay each ladder next to a submerged wheel; look around (I never knew for what); ask each other whether to dig in front of or behind the wheels; agree; get on our knees and start scooping the bottomless sand; fix the ladders in the grooves; push the sunken car while yelling at the driver words he never hears; smile number two; congratulate ourselves; rest a few seconds until someone shouts "yalla yalla"; dig out the sand-ladders; walk back to the car; fix the ladders to the roof-rack; get in the car and think of the next liquid patch.

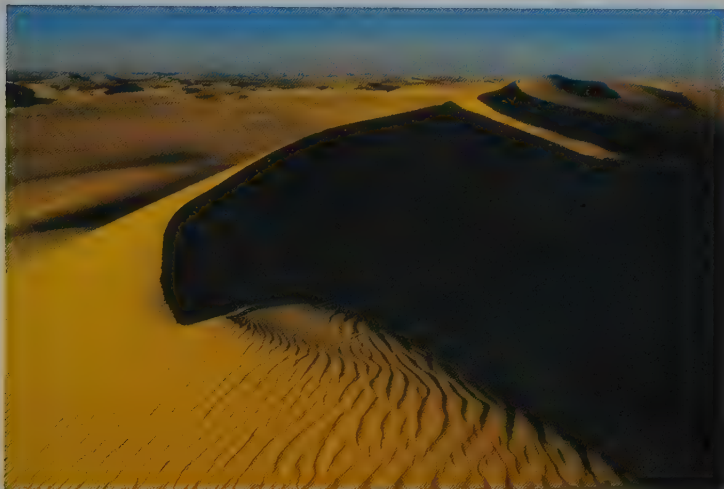
At such times, one forgets about time and place, forgets who he is or where he belongs. Only one thought occupies all his senses: this car must get out and the convoy must go on. All one sees is the distance between the buried wheels and the hard surface. Solving the situation is where everyone belongs. It was times like this when I felt the unknown watching us most. It followed us as we moved, as if waiting for the mistake we would sooner or later commit.



*The diversity and extent of the Sand Sea's mineral wealth is largely undetermined, although this crimson cast may suggest an abundance of iron ore deposits.*



To stop whenever I needed to film without interrupting the convoy, I drove in the last car from the third day on. My driver and only companion was Dahish. We sat in silence for the greater part of the day. He devoted his attention to the rippled surface while I committed my eyes to the dunes. The ridges always seemed higher towards the west on account of the structure of the dunes. Because the western banks slope more gradually than those facing east, they give the impression that



*The blown sand that flies east of Libya piles up  
and forms the dune chains of northern Sand Sea.*

the west is mostly unbroken, higher and more difficult to cross. However, after hours of driving, we started to notice that between the southern tip of a cascading seif and the beginning of the next one, the tip often drifts slightly eastward falling from the edge of the whaleback before it joins the next seif. This creates a gap in the dune-line through which we could descend east or climb west. We spent that day searching for those gaps. The dunes had already forced us too far east.

By noon, there was nothing to see. No shadows at all. Blinded by monotony before radiance, whenever I wanted to relax my eyes I either closed them or stared at the cloudless sky. There was nothing to fix my eyes on but the cars ahead. All day long I watched them disappear behind sand waves before rising again, like tiny matchboxes drifting on the waves of a motionless ocean.

Though we drove for 150 km between dawn and dusk, the distance on the map measured a straight 110 km. The difference was the zigzagging through contiguous whalebacks and negotiating the occasional crests. It is impossible to drive in a straight line through the dunes, even towards the southeast. Except in the far south, the maximum we could drive without veering was probably less than 10 km. Driving on the firm whalebacks that ran parallel to the crests, we discovered that they occasionally stretch axial arms connecting the center of a valley to the neighboring crests. We used those bridges whenever possible to secure our westward crossings.

The morning of our fifth day dawned calm and benign after a cold night. Dahish sat alone next to a small fire. He had been carefully using the roots of a dry Agram plant to light fires for four days. Like his forefathers, Dahish served in the Frontiers Corps and spent his entire life in the desert estranged from his Nubian civilization. He offered me tea as we sat warming our hands on the flames, watching a warmless sun rise above a distant dune.



In the early mornings, the dune shadows reflect a purplish cast. I picked up a handful of sand. The grains varied in color between transparent and jet-black. Dahish and I counted twelve colors from white, beige, yellow and gold to ochre, purple and brown. We later discovered that the sands darken towards the south where the desert is rich in minerals, especially iron.

By the afternoon of that day, we grasped the southern tip of a seif dune that had blocked us from heading west for about 70 km. As we rested there over a cup of tea, a pigeon carrying

a trap on its back landed at our feet. For 400 km, there has been no life -- no birds, no plants, and only a few insects: How could an ordinary pigeon survive this windswept desolation? Mestekawi and Younis stood up and searched the horizon. Removing the trap off the pigeon, Dahish warned, "someone's here."

That was hard to believe. After five days of driving without seeing a single track or any sign of human life, how could we possibly meet a living person? Dahish and A. Younis, who had both served in the Frontiers Corps patrolling the Egypt-Libya border, told me that Libyan hunters from Kufra often come to this part of the Sand Sea in September and October. This is the season of migration for hawks heading south. The hunters use an old technique called sharak -- tying a trap on a pigeon's back -- to capture the rare and lucrative Falcon (*Falco peregrinus*) and other Falcon species.\*

According to the map, we were 100 km from the southern limit of the Sand Sea. The dunes here drifted apart giving way for the first time to wide flat troughs of dark pebbles. Because the eastern dune disappeared completely from sight, we drove alongside the base of the western dune until it ended. There were no other geographic features in sight. We began to doubt the map and decided to reconfirm our position with the GPS (Global Positioning System). Dahish shouted, "car!" I didn't hear a thing, but Younis confirmed it. It took me nearly a minute to perceive the drone of an engine. The hum came from the open northwest, though none of us spotted its source. His eyes scanning the horizon, Mestekawi sighted his target. He pointed and with my binoculars I saw a tiny black spot gliding on the haze. Is it a smuggler? What is he trafficking? Drugs? Weapons? Are there other cars? How many of them are there? For the first time I wanted to know if we carried weapons.

As the car emerged from the mirage, Mestekawi jumped into his jeep. We all followed in no particular order and I found myself sitting next to Mestekawi who headed straight for the car. In those few seconds, he told me that hunters would stop quickly and surrender, but traffickers would speed off like no other car in the desert.

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\* *Falco peregrinus* (Shaheen) and the Lanner falcon are birds of prey that inhabit open terrain and rocky deserts. They feed on birds, mammals, reptiles and insects.

The car stopped. A single old man stepped out staring at us in fear and confusion. He probably comes to this place every year; it was the first time he ever encountered such a crowd. Mestekawi roared that this is Egyptian territory. The old man smiled in relief that we weren't an army patrol. "Isn't it all the land of Allah?" he asked. Deep inside, I replied "amen." I wanted to sit with him but Mestekawi, as a former Frontiers officer, firmly refused to make friends with a "Libyan outlaw". He asked him to go back. In no time, the old man disappeared the way he came, back into the mirage.



*Sunrise amid the dunes. The prominent challenges of being there fall into the orbits of mind and emotion, rather than the provinces of strong-arm and matter.*

The map was right. It took us another day to cross the dune-country further south. The dunes closed in on us once again and the cars sank many times in liquid sand. But we were so close that each time we sank, we believed it was the last.

The next morning, the Sand Sea ejected us to the hard country of northern Gilf Kebir. For the first time in seven days we could see a straight horizon and different colors. As the dunes faded towards the east, I asked myself if I would ever see this place again. And I wondered how that lonely hunter survived there. He was surely certain that, in this land of mute anthems, we were all inside God.



## NOTES ON SAND



We managed to zigzag our way from Siwa due south to Wadi Abdel Malik and the northern edge of the Gilf Kebir plateau. Gradually, we began to feel familiar with this uncharted territory, so much so that in the following years we would cross the Sand Sea by many routes in all directions proving that the dunes are, contrary to common sense, negotiable by motor-car.

We deliberately crossed the Sand Sea by a different route each time to cover as much unknown territory as water and fuel permitted. Each time we changed route and direction, we were forced to learn another technique for crossing the dunes. The more we entered the sands the more we respected them, and the more we understood the differences in temperament between each part of the Sand Sea. It took us several journeys just to be able to sketch a rough diagram of its interior, which can be divided into three sections, each with its own geographical disposition, history and secrets.

## NORTHERN SAND SEA

This 14.000 sq/km terrain of dunes and limestone outcrops lies between Siwa in the north and extends as far south as latitude 27° 50' N. Generally, the absence of water in a soil of bottomless sand prevents the establishment of any sort of plant cover. Thus, the peculiarity of the northern Sand Sea lies in the existence of minor concentrations of greenery amongst the dunes.

This semi-verdant strip, interrupted here and there by mounds of lifeless sand and barren limestone scarps, stretches from Gebel Gaigab in the northwest to Lake Sitra in the east. It contains a relatively diverse abundance of plants and wildlife, located in scattered *hatteyas*, around the natural and artificial wells, along salty lakes, and in isolated depressions. Although the width of this serrated strip is relatively small, it remains, in comparison with the rest of the Sand Sea, heavenly alive. To the south, vegetation is virtually nonexistent.



*Lushy green plants moor the sands and protect **Lake Sitra** from the creeping dunes.*

The knolls and outcrops of limestone form the uniqueness of the region's dunescape. By 'angling' the prevailing northwestern wind, these formations 'deflect' the large amounts of fine sand that it carries. All together, the wind, sand deposits and limestone formations have created a lattice of disordered labyrinthine dune forms. Sometimes several dunes intersect forming conical peaks that appear to be star-dunes. But in reality, the complete star-shaped dunes of Arabia's Rub al-Khali\* do not exist in the Great Sand Sea or anywhere else in the Egyptian deserts.

Wherever limestone is exposed, there is evidence of the marine origins of the northern Sand Sea. Shells, coral, nummulite and other marine fossils carpet large areas of this region. Especially in the east, the fossilized outcrops contain Echinoderm

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\* *Rub al-Khali (or Empty Quarter), in southern Saudi Arabia, is the largest dune field in the world.*

(a primary division of marine animals including sea-urchins and starfish). Dr. Ali Barakat of the Geological Museum in Cairo verified these finds as the only exposed evidence of Oligocene marine life in the deserts of Egypt.



*Exposure of coral fossils.*

During the Eocene epoch (58 to 37 million years ago), an upward movement of the earth's crust formed central Egypt's Eocene plateau. This uplift caused the existing sea to withdraw towards the north and west. Marine animals lived in the warm waters that covered this part of the dune-field until the sea retreated for millions of years to come.



*Remains of a withdrawn ocean that once covered Egypt's deep deserts before retreating to the confinement of today's Mediterranean Sea basin.*

In basin-like sites approximately 120 km southwest of Siwa, several dry lake beds exist. These are the last areas of any concentrated life as one heads south into the Sand Sea. We found tamarisks at some of these sites and beneath them tracks of lizards, beetles, jerboas and the remains of quails and bustards.\*

During the most extreme heat, tiny sand-colored butterflies and a variety of unidentified insects rise out of the sand and fill the air, making one's journey through the dunes a miserable experience. No one knows how they survive, but it seems that their eggs lie in the sand and are hatched by the intense heat. They vanish with the winds of cooler temperatures.

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\* Quails (*Coturnix coturnix*) and bustards (*Otis tetrax orientalis*) are common passing birds. They rarely attempt to cross arid lands. However, many of them astray from thier common routes and perish in the open desert.

## CENTRAL SAND SEA

All of the northern Sand Sea's features fade as we approach the heart of this dune-country. The character of the pristine dunes in the central Sand Sea -- which lies between 27° 50' and 26° 20' N -- make for easier going. The crested dune-lines of the north grow apart, giving way to equidistant passages of undulating sand. With care and patience and some luck, we learned to find the hard veins necessary for our long-distance driving. At wide intervals however, short chains of symmetrical crests bulge like submarines of gold. There is no need for a compass in the central Sand Sea because the crests always point due east of south (about 172 degrees).

Although we heard tales of an old caravan route through this part of the dunes, we never came across any evidence of such a trail. The only lineage of man that we found, like Ariadne's thread, were the petrol containers dropped as markers by the Long Range Desert Group. Strangely enough, these "Shell" tins have not been buried by the shifting sands.



*An Ariadne's thread of empty petrol tins. Dropped by the British army patrol, these tins mark the way out of the central Sand Sea.*



## **The Long Range Desert Group (1940-1942).**

General Sir Archibald Wavell, the British Commander-in-chief in the Middle East during World War II, commissioned Patrick Clayton to lead the first mission of a unit that distinguished itself as the Long Range Desert Group (LRDG). Clayton was chosen because he possessed exceptional knowledge of Egypt's western frontiers. As a surveyor for the Egyptian government, he helped delineate the new Egypto-Libyan borders in 1926. In 1932 he led the second of his reconnaissance missions to Gifl Kebir and approached the Libyan oasis of Kufra. In 1940, when Kufra suddenly became a source of British worries, Clayton's background made him the best person to provide strategic intelligence on Italian preparations and intentions in Libya.

The urgency for such operations forced Clayton to leave Siwa in the heat of August 1940. With two KV Chevrolets, Clayton and Ali Fudail -- accompanied by six New Zealander volunteers -- drove into the Great Sand Sea. Although the temperatures reached 51°C, they managed to return to Siwa after having penetrated deep into Italian territory where they reconnoitered the regular supply convoys along the Jalo-Kufra track.\*<sup>1</sup>

By the end of August, Major Ralph Bagnold gained command of the four patrols of the LRDG. Having received information on an expected Italian desert raid, Bagnold issued the first operational orders for his entire unit. They set up fuel and other supply dumps along the Libyan frontier to spy around Kufra and raid Italian dumps along the border. They cleverly chose the whaleback dune-country of the central Sand Sea for their east-west crossings. In their first year, the patrols raided several Italian ammunition caches. They also gathered information that contributed to the Allies' first surprise attack on the Italians on December 10th, 1940.

Satisfied with their performance, British commanders doubled the size of the LRDG one year after their first mission. "An LRDG patrol consisted of one officer, a land-navigator and fourteen men in five or six vehicles."\*<sup>2</sup>

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\*<sup>1</sup> R. A. Bagnold, *The early days of the Long Range Desert Group*.

\*<sup>2</sup> K. Shaw, *Navigation Lessons of the Long Range Desert Group*, *Geographical Journal*, 1944.

In August 1941, Bagnold handed over command to Lieut. Colonel G. Prendergast, his colleague during the pre-war desert explorations. The patrols then led a series of secret operations that placed spies throughout Libya. They also continued their raiding operations and carried out the unsuccessful "Operation Flipper" to assassinate the commander of Hitler's troops in North Africa, Erwin Rommel, in November 1941.\* Most of these raids were intended to pave the way for a projected Eighth Army offensive that began at al-Alamain, on Egypt's north coast in October 1942.

After a series of desperate battles, Axis troops in north Africa surrendered and withdrew to Tunisia in 1942. The Egyptian sands regained their silence once again, though the stories of the Long Range Desert Group still echo across the dunes of the central Sand Sea.



*Preserved by the dry climate of the dune country, this bogged-in 1940 Ford truck, abandoned by a World War II British patrol, was found west of Ain Dalla.*

Yet another episode of this story remains buried in this immense dune-field. An abandoned truck lies between two crested dunes about 70 km southwest of Ain Dalla, the nearest source of water to the central Sand Sea and the jump-off point of the LRDG. We spotted the truck for the first time on our way from Siwa to Dalla while on a journey with a former British World War II soldier. Richard Evans served as a member of the Royal Army Service Corps operating in the desert. He ran the resupply

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*\* Operation Flipper led by Col. Lee Cook and Captain Keiz took place on Libya's northern coast near Pedalitore, Barqa. The mission was aborted due to false information.*

convoy into Siwa, then a logistics area and base of operations for the LRDG. Fifty years later, Evans inspected the abandoned truck and identified it as a 1940 4x4 Ford. David List, who documented this visit, wrote that this bogged-in truck carried a number "within the serial range of vehicles allocated to the Long Range Desert Group in Feb. 1941. However, there is no record of any such vehicle being lost by them near Ain Dalla!"\*

## **Ain Dalla**

Dalla is a spring located in a small depression. At this tiny green spot east of the central Sand Sea, there grow a few palm trees that have guided travelers out of the surrounding deserts for ages. The word Dalla means the guiding one.

A net of ancient routes intersect at Dalla because of its strategic water supply. Indeed, these bubbles have throughout history been the destination of caravans, explorers, smugglers, refugees and army patrols.

Situated 100 km northwest of the Farafra oasis, Dalla was always on our way out of the Sand Sea. Wherever we were in this dry ocean, our minds automatically calculated the distance between our position and Dalla. Seeing the palms and tamarisks there always brought us a breeze of relief.



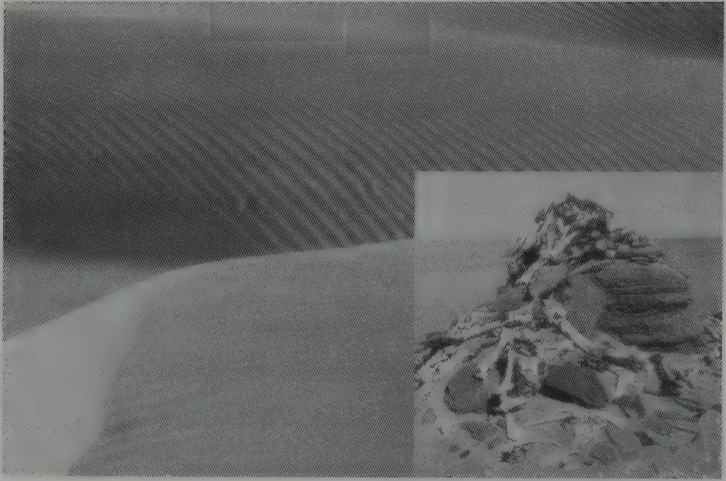
*A Long Range Desert Group patrol assembled for inspection in a Cairo barrack.*

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\* D. List, *After the War*, London 1997.

## SOUTHERN SAND SEA

The dune-field reaches its maximum width of 400 km here and the crested dunes rise higher and higher the further south one travels. Difficult to navigate, soft and extremely long, these sand-barriers rise to 150 m or half the height of the Eifel Tower. Combed by the wind in parallel ridges, they block even the most ambitious attempt to move in any direction but north or south, and then only if the sands permit.



In the west, the dune-lines grow apart. In the center, narrow and dark corridors of featureless gravel stretch for long distances before the dunes converge again towards Gilf Kebir. And in the east, the sand embraces numerous outcrops of sandstone. From these lifeless dunes, Bedouin, explorers, soldiers and scientists returned with new names and resurrected desert legends: Silica Glass, Regenfeld, Ammonite scarp, secret caravan routes and the lost oasis of Zarzora.



*Those who roamed the  
desert for centuries long  
knew of its secrets.*



## **Regenfeld**

Having traveled the Sand Sea for several years and in different seasons, we have experienced all its atmospheric extremities: hot and cold; clear weather and sand storms. But we never saw rain in the dunes. Thus grew our passion for investigating Regenfeld or the "rain-field".

When the dunes forced Rohlfs to abandon his project of crossing west to Kufra, he turned north towards Siwa. At the point where his caravan changed direction, the expedition beheld a miraculous rainfall. The place was called Regenfeld and remained the historical spot that witnessed both Rohlfs' defeat and discovery.

The early expeditions navigated towards a cairn built by Rohlfs amid the dunes. Prince Kemal al-Din, the grandson of Khedive Ismail who had sponsored Rohlfs' expedition, was tempted by Regenfeld. One of his first quests in the desert was to locate the cairn where Rohlfs had placed a bottle with a message.

On the 25th of February 1924, Kemal al-Din reached Regenfeld and located the cairn. Situated in the shadows of a cascading dune, the cairn was built of empty water tanks and a pile of stones. Inside the bottle, the Prince found a document that provided Dr. Jordan's geographical observations and the diary of the expedition's first days written by Rohlfs. Using that document, Kemal al-Din found that the dune above the cairn occupied exactly the same position and had the same height as in 1874.

Having replaced the original message with an Arabic copy, Kemal al-Din built a new cairn over Rohlfs'. Then arrived Count de Almasy eight years later. He dug out Kemal al-Din's message and took it back to Cairo where he delivered it to King Fuad. He left behind another bottle with a German copy of the original message beneath the reconstructed cairn.

On the afternoon of June 12, 1995, we reached Regenfeld from Abu Ballas -- the same route taken by the early explorers. Unlike Rohlfs and Almasy our expedition saw no rain.

Photo courtesy Hungarian Geographical Museum



*At Regenfeld in 1933, Almasy, following the tradition, deposited his 'message in a bottle' beneath Rohlf's reconstructed quarry.*

Indeed, the mystery of the rain at Regenfeld is not a secret. It rains in other places in the Sand Sea. But once Rohlf's marked it on the map, this became a site that all desert explorers seek. Sooner or later, there was bound to be someone there during a rainstorm, as happened to us at the Gilf Kebir plateau. The proof lies in the stunted plants we saw in other parts of the dune-field. To survive, these plants mainly depend on the rare drops that sometimes fall up to fifteen years apart.

When we arrived at Regenfeld, there was no sign of recent precipitation and the few scattered plants we found along the way were dead dry. At the foot of a cascading dune, we sighted the cairn, but Almasy's message was nowhere to be found. Thinking that we may have missed the exact spot, we checked each and every pile of stones within a 2 km circle. Our only reward was a broken camel saddle, similar to the ones we found later far to the south in Uweinat. Who used these saddles? We could not tell exactly, but they definitely belong to tribesmen who knew this desert well. For even though such places may remain enigmatic to us for many years to come, it has been traversed by the Arabs of Kufra, followers of the Sennusi, and

the Tebu whose desert-knowledge is beyond our limits. However, their 'way of knowing' is not passed down through books. They pass on this knowledge from one generation to another simply, perhaps without words, using silence that is the language of the desert.



*Camel saddles, a whip, wooden sticks and a water skin found at Uweinat.*

Part of that silence lies in a 50 km belt that cuts across Regenfeld between latitudes  $25^{\circ}$  and  $25^{\circ} 30' \text{ N}$ . Within this belt we found an interrupted line of stunted vegetation. Even at those times when we had to dig the cars out of the depths of this sand-belt, we found the remains of fragile plant-roots beneath the surface. There is a good chance that this strip, for a yet unknown climatic reason, receives more frequent rain than the rest of the Sand Sea.

And there is a better chance that this "undocumented" rainfall is linked to an oft-mentioned caravan route that crossed the dunes from Kufra to the oases of western Egypt. Ancient caravan travelers may have discovered this fact partly by coincidence and partly by listening to the silence. The fragile plants that sprout after desert rain provide modest grazing for camels. It is known that camels can smell rain and travel long distances to those areas where it rains, even when hundreds of kilometers away. By an innate instinct for survival, camels

followed the line of plants across this belt to the other side of the Sand Sea. The travelers simply followed their path. Could this all be linked to the legendary oasis of Zarzora, claimed to have existed somewhere east of Kufra, south of Siwa and west of Dakhla?. One of the first mentions of this lost oasis was by an Arab who saw it amid a dune-country while searching for a stray camel.

In the vicinity of Regenfeld, one dune follows another, more packed in than usual with narrow gullies and hard ground between them. It is easy to imagine how a camel caravan, traveling west, like Rohlfs', would tire quickly here. The steep ridges and soft ground would force even the fleetest camel to make long detours. Following the tradition, we also left a message at Regenfeld. So as not to confuse future travelers, we built our cairn further north, towards the Ammonite Scarp.

### **The Ammonite Scarp**

As Rohlfs filed north from Regenfeld, he came upon one of the few significant rocky outcrops in the Sand Sea. His discovery, which he named the Ammonite Scarp, stretches for more than 50 km east to west. From a distance, the single faint line in the sky that becomes the scarp is actually a series of ascending cliff-like steps. This isolated precipice is a significant exposure of fossilized cretaceous rocks dating from the last Mesozoic period (140-65 million years ago?).

The Ammonite Scarp was subjected to detailed analysis by Rohlfs' companion, the paleontologist Karl von Zittel. His study played a key role in understanding the geological history of Egypt. Ammonite is a mollusc resembling the cephalopods (squids, cuttle-fishes, octopuses, etc.) This extinct species, dating back 100 million years when this land was submerged, can be found in the fossiliferous

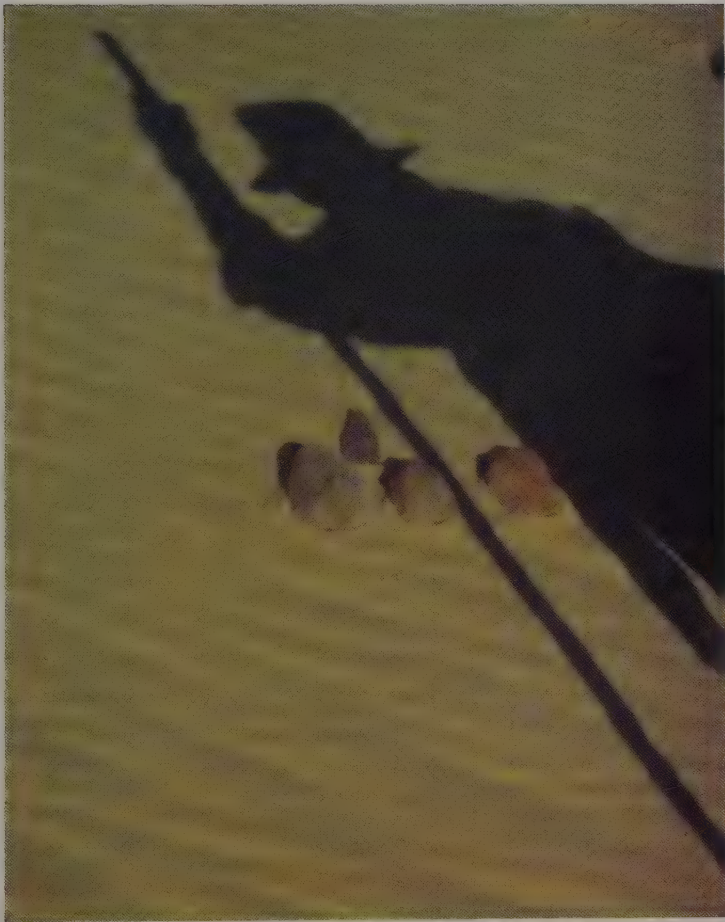


*Stone tools (blades, knives and a hand-axe) at the foot of the Ammonite Scarp.*



rocks of the scarp. Besides its geological significance, the site contains a great deal of evidence on the activities of prehistoric man.

"I have never seen so many (flint implements) as were laying scattered about in the neolithic or palaeolithic encampment I found near Ammonite Hill. This spot would be a paradise for flint experts.. I was immensely interested afterwards on visiting the cave excavated at Monaco and going over the little museum at its entrance to find there a case of flint implements and weapons corresponding exactly to those I had found near the Ammonite Hill".\*



\* Col. De Lancy Forth, *More journeys in search for Zarzora*, *Geographical Journal*, LXXXV, 1, 1930.

## SILICA GLASS

### A Mystery In a Mysterious Land



#### *The Impact Origin of Libyan Glass*

*The Libyan Desert Silica Glass is a very unusual natural material composed almost entirely of silica and found as fragments of various sizes in the southwestern Sand Sea. The surface of this region is covered by linear dunes with barren corridors of granules, pebbles and cobbles of quartz, chert, quartzite and other siliceous materials.*

*The glass fragments were first found by Bedouin Arabs who led caravans between Egypt and Libya in the 1840s. Yet our knowledge of this geological problem dates back to 1932 when P. Clayton of the Desert Survey of Egypt announced his discovery of what he named the Libyan Desert Silica Glass.*



*Although it has been proved that pieces of Silica Glass were used as hunting tools (**above**) during prehistoric periods, the origin of this material remains a mystery, confusing geologists and attracting people of various interests. Several hypotheses have been introduced to explain how it was formed. Both terrestrial and extraterrestrial origins have been suggested as well as low and high temperature formation processes. There is a general tendency, however, to consider the Libyan Silica Glass as similar to impactites, meaning that it was formed by a sudden melting and rapid cooling of terrestrial rocks as a result of the impact of large cosmic bodies. According to this hypothesis, the glass is formed of sandstone bedrock fused by the generated heat of a gigantic meteorite impact.*





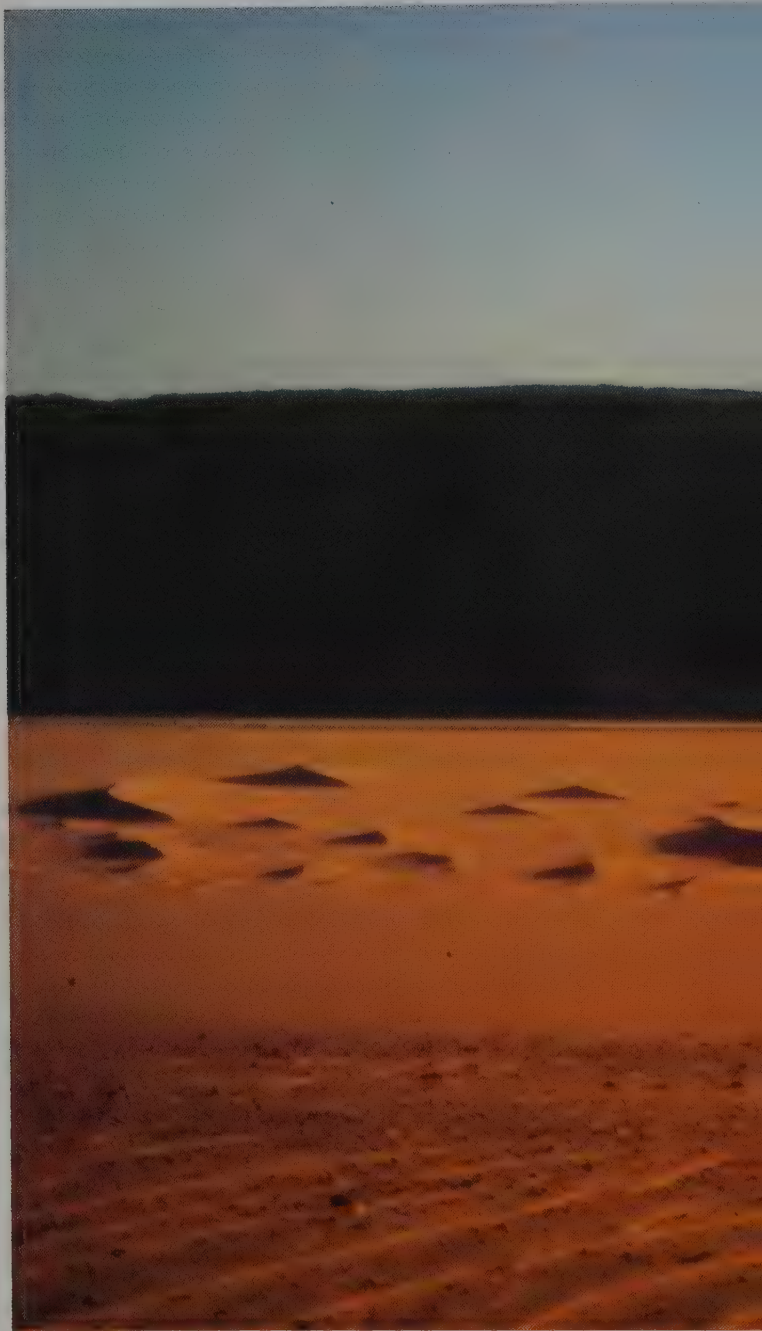
*Until recently, scientists had not found meteoritic materials in the southern Sand Sea or the neighboring Gilf Kebir. Thus proof of the hypervelocity meteorite impact hypothesis was delayed until the arrival of the Egypto-Italian expedition to the southern Sand Sea in 1993. They collected fragments of iron and stone meteorites; in addition two fine grains of coesite and/or stishovite (meteoritic materials) were identified.*



*More recently, planar microstructures in some of the fractured quartz pebbles and grains of the sandstone bedrock of that area were detected. Meanwhile, a few weathered fragments of octahedritic and chondritic meteorites were collected from the area as well.*

*The highly oxidized nature of these materials suggests that they belong to a meteorite that fell to earth in a distant geological age. It is still difficult to assume that these materials date as far back as 28.5 million years, as has been suggested.*

**Ali A. Barakat**  
Cairo Geological Museum



*The walls and river bed of Wadi Hamra, a narrow armored canyon in northern Gilf Kebir. On each side rise sheer cliffs of rust red, tan, grey sandstone smoothed and scooped into ripples and whorls by millennia of wind and blowing sand and swirls of ancient streams.*







# THE GILF KEBIR PLATEAU

## INTRODUCTION

Distant in the heart of the Libyan Desert lies a plateau that is seldom mentioned unless one speaks of the least known regions on Earth. Rising from the bare flats of southwest Egypt, this plateau was first sighted in 1925 by Prince Kemal al-Din during his second expedition into the Libyan Desert. In 1926, Kemal al-Din mapped the massive plateau's eastern cliffs, calling it Al-Djilf Al-Kebir, meaning the Great Black Escarpment. This was later abridged to Gilf Kebir. With its cliffs, ridges, mountainous hills, possible impact-craters, dormant volcanoes, ancient dry lakes, red canyon valleys and, of course, sand dunes, this extensive region appears as if part of the planet Mars had landed on Earth.

### **The Geography**

Two great blocks of dark sandstone and basalt thrust out of the earth to make up the massive Gilf Kebir. The northern lump extends between the Great Sand Sea and the Tropic of Cancer while the second lies farther southeast. To distinguish them, we named the latter al-Gilf al-Qibli, meaning the Upper Gilf. The once united plateau is now split in the middle by a wide valley we called Wadi Assib. Running from north to south, this wadi is filled with a chaotic mass of soft dunes and constantly moving sand. Some of their peaks rise to the top of



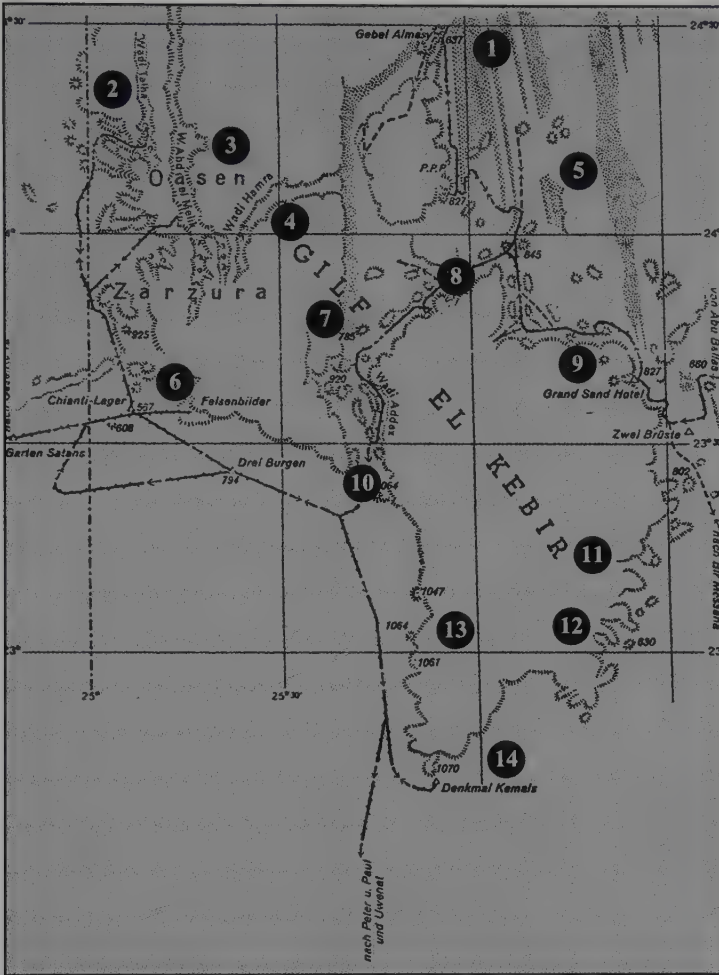
the surrounding cliffs and creep over the table-land of the plateau in the form of crescent-dunes.

The Gilf plateau reaches a maximum height of 1050 m above sea-level along the steep western cliffs, which rise some 300 m above the surrounding desert. Apart from a narrow gap in the scarp, the western cliffs run unbroken for an unceasing 180 km. The table-land of the plateau tilts and slopes gradually towards the east. As a whole, the Gilf Kebir plateau occupies an area of some 12000 sq/km, roughly the size of Switzerland.

Most of northern Gilf Kebir is half-buried beneath masses of complex dunes and only the northwestern extremity is exposed and relatively accessible. Canyon valleys with some greenery and wildlife stretch and wind in that area. In east and southeast Gilf Kebir, a dozen canyon-valleys cut deeply into the interior of the plateau. They run eastward and are partially covered by drifting sands. Their mouths open to the 700 km wide emptiness that separates the plateau from the rest of Egypt. Between Gilf Kebir and the living Nile valley lies an untraversed plain dotted at intervals of hundreds of kilometers by wells, most of which have long been plugged with sand.

### **Remoteness and Inaccessibility**

Since its discovery and the mapping of its cliffs, the remoteness and inaccessibility of the Gilf Kebir area have prevented a complete exploration of the plateau's interior. Gilf Kebir and the routes leading to it are so fraught with logistical problems that only well-fitted expeditions could reach it. Despite the fact that two of the eastern valleys have been excavated by several parties, to the best of my knowledge, only three explorations have investigated the plateau's interior. Remote and with absolutely no water anywhere, the Gilf Kebir remains one of the least known regions on Earth.



### MAP OF GILF KEBIR

Showing routes of Almasry's expeditions and the plateau's areas of interest.

- |                     |                             |
|---------------------|-----------------------------|
| 1. Great Sand Sea   | 8. Qaret al-Mestekawi       |
| 2. Wadi Talh        | 9. Wadi al-Mashi            |
| 3. Wadi Abdel Malik | 10. Aqaba Pass              |
| 4. Wadi Hamra       | 11. Wadi al-Bakht           |
| 5. Baz Crater       | 12. Wadi Wasaa              |
| 6. Wadi Soura       | 13. Ard al-Akhdar           |
| 7. Ghurud Abed      | 14. Kemal al-Din's Monument |

In the beginning of the 1990s, Col. Ahmed al-Mestekawi, formerly of the Frontiers Intelligence Department, began a new period of geographic and scientific investigations. Through a series of seven expeditions, the Gilf Kebir was approached via different routes and was traversed as thoroughly as possible in all directions. I was fortunate enough to join six of these expeditions between 1994 and 1998.

We had no map to guide us through the interior of the plateau. The topographic maps of the 1930s -- although accurate along the bounding cliffs -- contained deadly errors concerning the plateau's depths. Even satellite images and maps could not account on the type of ground we planned to cross.

Indeed, the arid, desolate and forbidding landscape of Gilf Kebir "causes it to appear more like the deserts of [planet] Mars than any other desert on the Earth. This is suggested not only from an orbital perspective, but also from the nature of the surface materials."<sup>\*1</sup> According to NASA scientists, the Gilf Kebir landscape -- surrounded by wind-swept plains and covered by red sand dunes and jagged rocks -- resembles Mars. "The similarities in canyon outline and valley shape between Gilf Kebir and the tributary canyons...on Mars suggest that similar mechanisms may be responsible for their formation."<sup>\*2</sup>

The more we penetrated into the interior of this region, the more we realized that much of it has yet to be explored. Like Rohlfs more than a hundred years before, we earned the honor of naming un-explored valleys, un-mapped hills, dune-fields. In most areas, we saw no signs of the previous expeditions and we drove for days through vast plains where nothing existed but isolated hills and scattered mirages. We corrected the positions of cliffs and added many dunes, hills and valleys to the previously blank spaces on the map. Like the Apollo 11 crew, we often had the feeling that we were the first people to get there.

So remote is this region that the nearest inhabited oasis, Dakhla, lies 550 km due northeast and the closest water supply, at Bir Tarfawi, is 400 km due east. To the west, north and south there is nothing but the most deserted of deserts.

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<sup>\*1</sup> T. Maxwell & Farouk el-Baz, *Annals of G.S.E., Vol.XI, 1981, p. 255.*

<sup>\*2</sup> Ted Maxwell, *N.A.S.M., Annals of G.S.E., Vol. XI, 1981, p. 300.*





*Details of wind-abraded sandstone. On a much larger scale, much of the Gilf Kebir plateau has been eroded the same way.*

Over time, we grew more familiar with the ground cover, the distribution of dune-fields, and the deeply scarred regions. We located passages, discovered archaeological sites and investigated rock drawings and water-jar depots that hinted of a startlingly unique past.

The plateau's discovery also has a history. So let me introduce you to the Prince and the Count, two names which have become synonymous with Gilf Kebir.

## THE DISCOVERY OF GILF KEBIR

**The Prince Kemal al-Din Hussein (1875-1932)**



*"He was a man of infinite charm and possessed all the characteristics of the Egyptian Royal family -- a very quick and brilliant intelligence, a wonderful memory, and the most extraordinary general knowledge of men and things."*

*-Major C. Jarvis.*

After the death of his father, Sultan Hussein Kamel, Crown Prince Kemal al-Din chose to follow his own star. He renounced the throne of Egypt to pioneer the use of motor-cars in desert exploration. Much like his cousins Prince Youssef Kemal and Omar Tousson, Kemal al-Din was mesmerized by the 'lure of the desert' where he often went to hunt.

Then came the golden decade of discoveries. The international interest and appreciation gained by Howard Carter for his discovery of the tomb of Tut Ankh-Ammon in 1922 and the admiration for Ahmed Hassanein's daring journey through the unknown Libyan Desert in 1923 inspired Kemal al-Din to proceed with further explorations. He devoted himself to the geographical investigation of the remotest areas of the desert.

He was exceptionally suited for such a task. In addition to a very keen interest in everything pertaining to desert geography, he possessed a genius for organization and leadership, as confirmed by Dr. John Ball who joined two of the Prince's three expeditions to the unknown.

### **The 1923-24 Expeditions**

His first expedition departed from the Dakhla Oasis in the Spring of 1923. With the exception of a reconnaissance mission by the Army Light Car patrols in 1916-17, the whole area southwest of Dakhla was unexplored. Looking at the Egyptian map of those days, massive blank spaces of unsurveyed areas surrounded the Nile and the five major oases of the Egyptian Sahara.

"Kemal al-Din entered the desert with three objects in view—firstly to find a possible track to the big Oasis of Kufra, in those days a *terra incognita*; to locate if possible the missing or rather mythical oasis called Zarzora, which Arabs said existed some 200 miles to the west of Dakhla; and thirdly to discover a buried bottle left by Rohlfs, the German explorer in the sand-dunes whilst on his journey through the desert from Dakhla to Siwa some fifty years before."\*

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\* C. Jarvis, *Three Deserts*, P. 99.

Regenfeld was the Prince's first target. He was after the message in Rohlfs' bottle. Because his 1874 journey was the first scientific expedition to the Libyan Desert, the document he left at Regenfeld was of extraordinary value. Dr. Ball wanted that record to check and compare Rohlfs' readings of coordinates, altitudes and dune distribution with his own.\*<sup>1</sup> Kemal al-Din, whose grandfather Ismail Pasha had sponsored Rohlfs' expedition, yearned to reach the spot where Rohlfs witnessed a miraculous rainfall said to have saved his caravan from dying of thirst.

They knew that ahead of them lay a waterless and forbidding country. And they knew that fuel and water dumps had to be prepared. The question was where to put them. Pottery Hill? Discovered by John Ball and the patrol of 1916, Pottery Hill was the only geographical feature known in this tract. So Kemal al-Din planned to visit the site and use it as a jump-off point towards Regenfeld which lay some 75 km due north from Pottery Hill, in the Great Sand Sea.

### **Preparations For a Royal Expedition**

In those days, Box Fords and a Citroen fitted with rubber caterpillars were the last word in desert transport. Prince Kemal al-Din purchased six Box Fords and three Citroens and "fitted them with bodies specially constructed to his own design for the accommodation of the necessary supplies of water, running material, food, camping equipment and scientific instruments."\*<sup>2</sup> Those were the cars sent to be tested in the fuel dumping mission west of the Dakhla Oasis.

Major C. Jarvis, then stationed in Dakhla as District Commander of the oases, had his tranquility shattered. He received orders to handle the vehicles' trials and fuel dumping a month before the Prince's arrival.

"We took with us the nine cars with their drivers, an old Sudanese guide and my Arab orderly to lay two fuel dumps of petrol, water and stores as far from Dakhla as possible. The next thirty days were a nightmare of hauling and shoving cars

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\*<sup>1</sup> Check "Regenfeld", chapter 1, p. 71.

\*<sup>2</sup> J. Ball, *Bulletin of the Geographical Society of Egypt*, 1932.



through deep sand, unloading and carrying packs over dunes to firmer ground beyond... The country in which we were working was then quite unexplored... The desert, which has never had any particular message for me, was of the dulllest and most depressing variety, i.e. huge sweeps of sand with here and there a small escarpment or rocky hill standing out like an island on a yellow waste. The desert was absolutely lifeless... and on average we were struggling backwards and forwards between dumps for fourteen hours every day..." \*



*Photo courtesy Yasser Alwan Collection.*

*This 1923 Citroen was specially constructed to Kemal al-Din's design.  
Here, the Prince's crew examine the caterpillar at the Pyramids.*

By the time Prince Kemal al-Din started out on his first attempt to solve the riddles of the Sand Sea, two fuel dumps awaited him. The first lay about 150 km southwestward at the foot of a rocky conical hill that rose 65 meters out of the sand while the second was some 100 km farther west near Pottery Hill. Jarvis had accomplished his mission to the Prince's satisfaction. In return, the Prince gave him the honor of naming the site of the second dump, which Jarvis chose to call "Heartbreak Halt."

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\* C. Jarvis, *Three Deserts*, p. 98.

Kemal al-Din failed to find the cairn of Rohlfs and was forced to return to Dakhla. With car problems, fuel shortage and the impassable dune-ranges ahead, the Prince thought it too dangerous to advance. After a seven-day journey, Kemal al-Din returned to the oasis with only four of the nine vehicles he began with.

Jarvis, the only source of information on this first journey, never returned to the Libyan Desert.\*<sup>1</sup> He left the oases to Sinai, where he served as Commander of the peninsula and wrote about his explorations in the desert.

"Our expedition, therefore, resulted in the obtaining of negative information--we proved that it is absolutely impossible to get through to Kufra from Dakhla with the cars then invented ; we had failed to find the missing oasis of Zarzora ; and though we reached the spot where Rohlfs buried his bottle we failed to find his cairn."<sup>2</sup>

On January 18, 1924, the Prince returned to the desert. Better equipped than before, he knew what separated him from Regenfled. He had already experienced the forbidding waves of sand and the gravel-lanes between them. He had learned that every lane has a twist, and that almost every line of sand-dunes has a gap in it sooner or later. The trick was to find them. And this time Kemal al-Din was stubborn.

The Prince drove from Cairo to Farafra via Baharia, making him the first person to reach Farafra by motor-car. From there, he continued to Dakhla via Abu Minqar and targeted Pottery Hill. With the experience of his first attempt, the vehicles succeeded in clambering up the dunes and safely crossed the occasional soft patches. A few days later, the expedition approached Regenfled and camped at the foot of some low sandstone hills. This camp ground was later marked on all Egyptian maps as Qur Abu Hussein. The Prince named it after his grandfather.

They landed at Regenfled the next day. Having crossed two dune lanes, this time Kemal al-Din found Rohlfs' cairn and the bottle with the message. The expedition also discovered a

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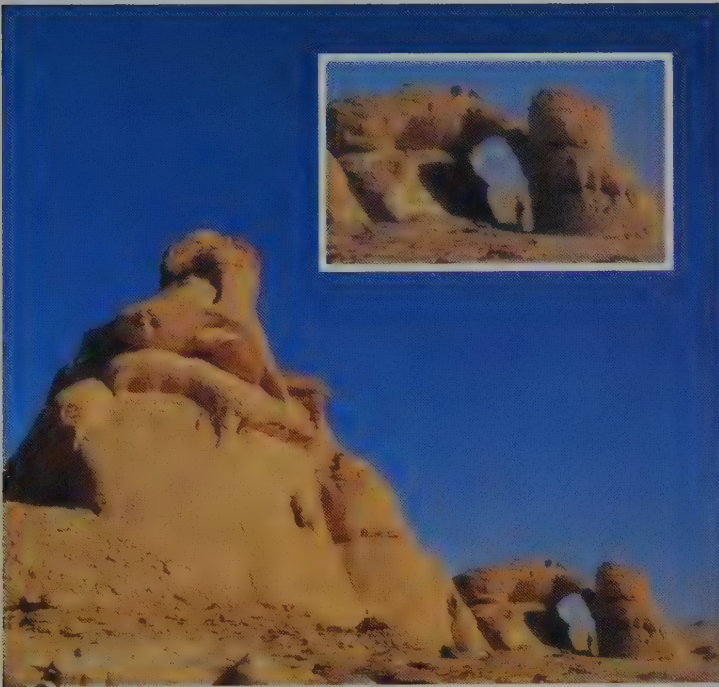
\*<sup>1</sup> As far as I could trace, no one but Jarvis has ever mentioned Kamal al-Din's unsuccessful attempt of reaching Regenfled in April 1923.

\*<sup>2</sup> Major C. Jarvis, *Three Deserts*, p. 101.

dump of stores that Rohlf's had left before committing himself to the dunes. The base of the cairn consisted of seven empty iron water-tanks. Rohlf's' document was found among them. It was written in German. Kemal al-Din replaced it with a copy and an Arabic document of his own expedition: \*

*"This is a copy of the original document by Rohlf's, the Prussian Royal Counselor, which I took on Monday 20 Ragab 1342 Hegira corresponding to the 25th of February 1924. I have come especially in search of this document. My camp is 7.8km to the west, at the same latitude and it is marked by a single pyramid of stones."*

**- Kemal al-Din Hussein**



*Sugar Loaf Hill: From Dakhla, it stands as a primeval landmark on the way to Abu Ballas, Regenfeld and Gilf Kebir.*

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\* K. Hussein, *A la recherche des vestiges laissés par l'expédition Rohlf's*, 1925.

## **The Odyssey of 1924-25**

The Prince's second successful expedition to the Libyan Desert left Kharga on December 29, 1924.\*<sup>1</sup> He headed towards Uweinat -- the mountain-oasis that had been discovered by Ahmed Bey Hassanein one year earlier -- along the Darb al-Arbacien. For centuries, this Darb, the Forty Day Trail, had been used as an ancient slave-road between Egypt and Africa. Replenishing his water reserves at Bir al-Cheb, the Prince turned west towards his target. From there he continued southward into French Equatorial Africa and then turned east and explored large parts of northern Sudan before returning to Kharga on March 7, 1925.\*<sup>2</sup>

"This long journey of 1924-25, the greater part of which lay over previously unknown ground, was remarkable not only for the long distances traversed between successive water-sources, but more especially for the large number of new and accurately-determined geographical positions and altitudes which resulted from it".\*<sup>3</sup>

During the expedition, Kemal al-Din pinpointed the exact location of Bir Tarfawi, known today as the Sharq al-Uweinat Project, at 430 km from the Uweinat mountain. He also explored the Erdi Plateau, now in Chad, and discovered the oasis of Merga in northern Sudan. At Uweinat, he examined the rock-paintings, mapped the mountain and determined its altitude, which at 1907 m above sea-level became the highest peak in Egypt's Sahara. On his way back to the Nile, he navigated from Bir Tarfawi straight to Kharga, gaining more information on another unknown tract of desert. Indeed, Bir al-Cheb, Bir Tarfawi, Bir Mesaha, Merga oasis, Karkur Talh and Uweinat had never existed on any map before 1925.

## **The 1925-26 Expedition**

The third of the Prince's expeditions remains the most celebrated because of the discovery of Gilf Kebir. Although Kemal al-Din had sighted the southern tip of the plateau on his way between Bir Tarfawi and Uweinat during his previous journey,

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\*<sup>1</sup> *Note du S.A.S. Le Prince Kemal al-Din Hussein, 1928.*

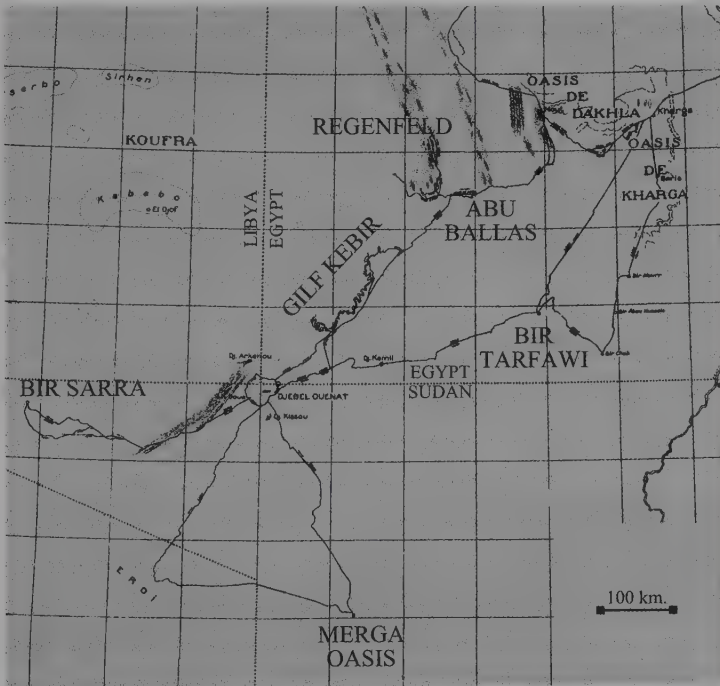
\*<sup>2</sup> *Ibid.*

\*<sup>3</sup> *J. Ball, Bulletin de la Societe Royale de Geographie d'Egypte, 1932.*



the actual discovery and mapping of the 300 km eastern scarp of the plateau took place during this third voyage into the Libyan Desert.

He left Dakhla with twenty men -- expert scientific observers, doctors of medicine, mechanics and personal servants. They pivoted around the extreme southeastern edge of the Great Sand Sea, reaching as far as the Abu Ballas. From there, they turned southwestward into the hitherto unexplored stretch of desert between the Sand Sea and Uweinat. He aimed for the well of Sarra in Libya -- then recently dug by the Senussi of Kufra to secure caravans heading into central Africa -- but the great black escarpment lay in his way.



*Map of the Libyan Desert showing routes of Kemal al-Din's expeditions.*

The dunes of the Sand Sea that were once believed to have no end faded into a tremendous dark-colored plateau with sheer cliffs that extended due south. The plateau soared to over 300 m above the broken country where they drove. Some impossible

to cross dune-lines from the Sand Sea blocked them from penetrating most of the valleys piercing the scarp. And so they drifted along the cliffs, stopping 140 km north of Uweinat.

For an unknown reason, the Prince never explored the hidden parts of this plateau himself. Instead, he supported people like Almasy and P. Clayton on their expeditions. He supervised these operations from Paris, where he had commissioned a reliable detailed map of the Libyan Desert. In 1928, the Prince was awarded the Gold Medal of the Geographical Society of France for his extensive work in the Libyan Desert.

He died of blood poisoning on August 6, 1932 while his companions prepared for a comprehensive exploration of the plateau. Though the exploration paused for a lack of finance after the death of Prince Kemal al-Din, it was to be continued shortly after with the support of Karl Von Mandelessohn, the Berlin banker who sponsored Almasy's 1932-33 expedition as the late Kemal al-Din had intended.

At the southern tip of the escarpment, the first section that Kemal al-Din had sighted of his Djilf al-Kabir, his comrades erected a monument in his honor. The memorial consists of a base and superstructure of a total of 33 pieces, symbolizing the year Almasy erected the monument. There are seven base rocks of flat sandstone and 26 pieces in the superstructure. It was 1926 when Kemal al-Din announced his discovery of the plateau.



*At the edge of immensity; isolated rocks mark the ragged border of the Great Selima Sand sheet, the 40,000 sq/km emptiness between Egypt and Sudan*

Almasy placed the monument precisely at the extreme southern point of the Gilf plateau. He used a mound of stones on top of a flat hill to fix his measurements of north and south. Gazing at this mound in line with the top of the monument, my compass read 'Zero' degrees.



*At the southernmost tip of Gilf Kebir, Mestekawi (sitting) and I celebrate the re-discovery of Kemal al-Din's monument.*

*The marble plaque, written in Arabic, still reads: "In the memory of His Sultanic Highness Prince Kemal al-Din Hussein, the great Libyan Desert explorer. This monument was placed by some of those who appreciate his great effort."*

## **FURTHER DISCOVERIES IN GILF KEBIR**

### **The Real English Patient: Count de Almasy (1895-1951).**

Anxious Egyptians thought that Adolph Hitler was coming to free them from colonial Britain. While German troops were marching through the dusty tracks of the northern Sahara, deep in the hearts of most Egyptians, a desperate shout echoed "forward Rommel."

## **The End (part I)**

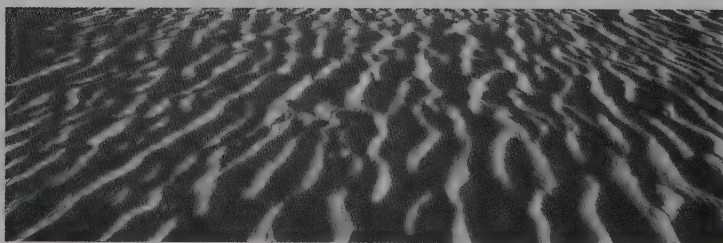
The world is in flames. It is 1941. Hitler dispatches his armies in all directions. The German troops have conquered Europe and are trying to cut off Great Britain from its oil fields in the Middle East. They targeted Cairo and the Suez canal. Egypt was the final destination.

For months, the Italians opened battlefronts in the Libyan Desert expecting easy victories over British troops. The fighting seesawed across the border. In 1940, Britain resisted desperately to keep the Axis away from the Suez Canal and out of Egypt.

Early in 1941, Hitler sent tank units trained in desert warfare to help the Italians invade Egypt through its Western Desert. Known as the '*Afrika Korps*,' the tank units were led by Field-Marshal Erwin Rommel whose tactics in desert battles earned him the nickname the 'Desert Fox.' By Spring, Rommel had recaptured lost Italian territory. The German beast was ready to swallow the Middle East.

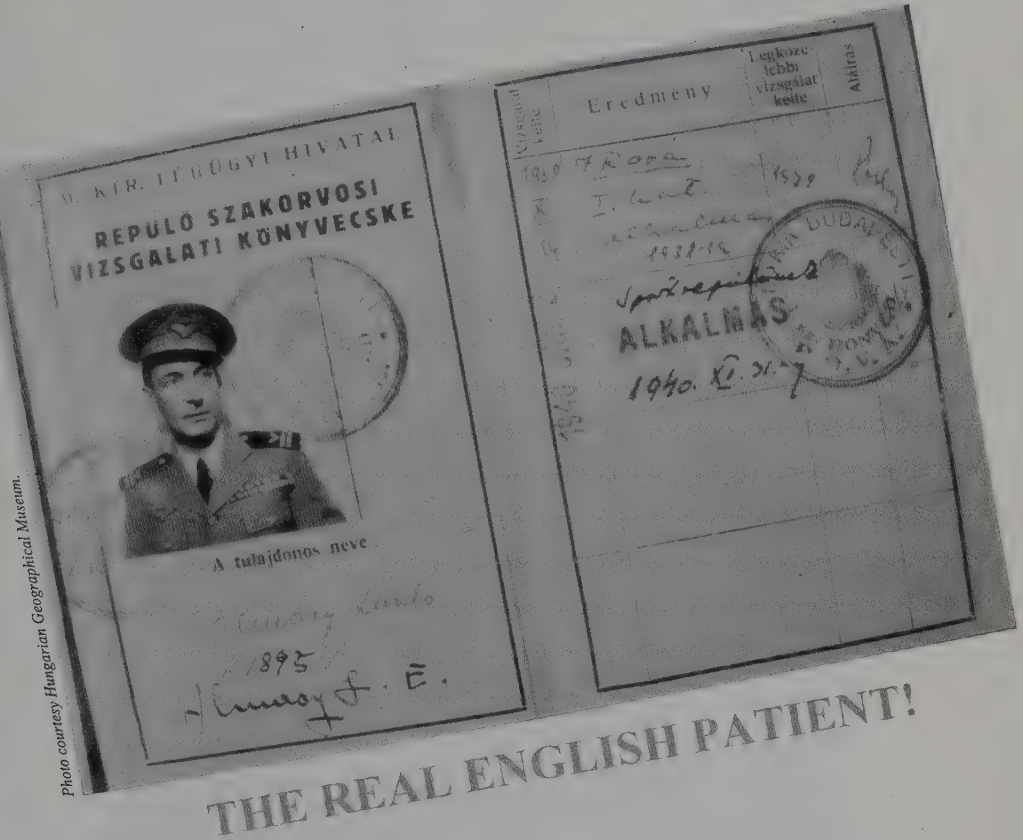
Although Egypt and the Nile valley were just behind the pale horizon, they were still far from the hands of the Axis troops. As ever -- a cruel forbidding desert stood in-between.

The Egyptian Sahara joined the war on the side of the Allies. It challenged the 'Desert Fox' with three of the world's most impassable geographic features. To the north, the Qattara Depression, with its infamous salt marshes and recently mined passages, formed a deadly trap for Axis machinery. In the south, the arid, remote and unsurveyed Gilf plateau was believed to be unbroken. Between these two barriers lay a waterless ocean of soft sand known as the Great Sand Sea.





Most of this desert was, and still is, unsurveyed. Few individuals knew their way through this untamed land. Those were the men of the moment.



The Hungarian Count Laszlo Edward de Almasy was one of those men. He was already a legendary name in the history of desert exploration. Like many others, including the late President of Egypt Anwar Sadat<sup>\*1</sup>, he delivered his loyalties to Germany during World War II. Destiny brought him to North Africa and to Rommel who sought any information on the Allies in Egypt.<sup>\*2</sup>

The question Rommel wanted answered was simple and explicit: What does Almasy have to offer?

<sup>\*1</sup> A. Sadat s. *In-search for Identity*, 1979, P. 134.

<sup>\*2</sup> M. H. Heikal, *Kharif al-Ghadab*, PP. 48-50, 1988.

## **The Beginning (1929-1936)**

The Hungarian Count first came to Egypt in 1929. He accompanied Prince Ferdinand of Liechtenstein, who drove from Mombasa in Kenya to Khartoum in Sudan, and then up the Nile to Cairo. An amateur explorer with great knowledge and rare courage, Almasy heard of the exploratory expeditions of Hassanein Bey and Prince Kemal al-Din. He even witnessed the early preparations to fill in the blank spaces on the Egyptian map. Hoping to join one of these expeditions, he decided to remain in Cairo.



*Photo courtesy Hungarian Geographical Museum.*

*Almasy, Bermann, Kaddar and a desert cooled champagne bottle at their base camp, the "Grand Sand Hotel" in eastern Gilf Kebir (1931).*

In 1931, he succeeded in organizing his own expedition to search for the lost oasis of Zarzora and the lost Persian army of Cambyses in the Egyptian Sahara. For this self-sponsored journey, known as the Almasy-Clayton Expedition, he obtained a Moth plane for their intended long-distance reconnaissance over Gilf Kebir and the Great Sand Sea.

The members included Patrick Clayton of the Desert Survey, Wing-commander H.S. Penderel as pilot, and the young English Baron Sir Robert Clayton, owner of the plane.

They set up their base-camp at the foot of Gebel Um Ras in western Gilf Kebir and went for daily reconnaissance along the unexplored cliffs of the plateau. At the foot of the 300 m precipice, P. Clayton discovered some rock paintings. Located in two caves, this was the first evidence of prehistoric occupation in Gilf Kebir. Almasry astutely named that place Wadi Soura, the picture valley.

With a bird's eye view, Almasry spotted a long valley with a large amount of vegetation. This was the first cluster of trees found in the empty spaces between Libya and Dakhla. But they couldn't find the entrance to the valley from the air.

They flew farther south over the unknown desert to complete their survey. They located numerous craters enclosed by Gilf Kebir, Arkenu, Uweinat and the Kissu mountain of Sudan. So far from the inhabited world, the expedition had to abandon its investigations for lack of fuel and water. Still, the group decided to return the following winter to search for the entrance of the mysterious valley they claimed as Zarzora.

Almasry was a war-pilot, car-engineer, renowned race car driver and lion-hunter. In February 1932, Kemal al-Din enlisted him to lead the next expedition to Gilf Kebir. Unfortunately, the Prince died in August, followed by the death soon afterward of Sir Robert Clayton.

After their deaths, Almasry became one of only three survivors to have explored the southwestern corner of the Egyptian Sahara. Patrick Clayton, the cartographer, of the Desert Survey of Egypt and the British officer Major Ralph Bagnold of the Royal Corps of Signals were the only other men who could make such a claim. All three knew that war was heading their way, sooner or later, through this unexplored desert. He who knew its secrets best would become the master of this game. And so their relation-ship was laden with nationalistic and ideological tensions.

Despite their mutual passion for the desert, the British officials made little attempt to cooperate with the Hungarian adventurer. Nonetheless, the work of these three men remains the basis for all strategic analyses, scientific studies or adventurous travels to the Egyptian Sahara. All three also shared great respect for Prince Kemal al-Din and his early discoveries, which each one of them was to complete in his own way.

When the Prince died in August of 1932, Almasy's preparations for his expedition to Gilf Kebir ground to a halt. The Prince became a memory and the expedition remained a dream. By winter of that year, the Berlin banker Robert Von Mandelssohn agreed to sponsor Almasy's dream. King Fuad of Egypt then granted him the right to use Kemal al-Din's equipment. This time Almasy traveled to Gilf Kebir without the British.

A delay in his departure enabled P. Clayton to take the first step into the valley they had seen from the air. When this information reached Almasy, the stubborn Count decided to explore the interior of the plateau instead. This change in plan led him to his secret discovery of the what appeared to be the sole gap in the western scarp. He realized quickly the importance of such gap, which he called "Al-Aqaba", for it could be the only southern passage between the Italian Libya and British Egypt.

He penetrated farther north than expected and visited that semi-green mysterious valley. He learned the history of the place from his Tebu guide who also led him to other undiscovered valleys with trees. Almasy called those valleys Wadi Zarzora.

Restless as ever, he shifted his attention to the mountain of Uweinat. Traveling easily along the route mapped out by Kemal al-Din, he arrived at the foot of the mountain after stopping at the wells of Tarfawi, Sahara and Mesaha.\*<sup>1</sup> Using a fleet of well-equipped Ford trucks called Yemkin (maybe), Lessa (not yet), Ma'lesh (never mind) and Inshalla (God willing), his expedition investigated the circular mountain and its surroundings. He discovered more rock drawings at Ain Doua in southern Uweinat\*<sup>2</sup> and reported on similar drawings that he discovered in northern Sudan.\*<sup>3</sup>

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\*<sup>1</sup> Two wells dug by the surveyor H. Beadnell in 1927.

\*<sup>2</sup> A. Holleireigel, *Zarzura*, Orell F. Verlag, Zurich.

\*<sup>3</sup> A. J. Arkell, *Rock Pictures in N. Darfur, Sudan Notes and Records*, Vol.XX.1937.



Count de Almasy gathered a tremendous amount of information on the Egyptian deserts in general and the Uweinat-Gilf Kebir area in particular. He recorded his experiences and discoveries in the publication of The Royal Geographical Society of Egypt under the title *Recentes explorations dans le Desert Libyque* 1936. In 1940, he wrote *Unbekannte Sahara*, unknown desert.

Photo courtesy Hungarian Geographical Museum.



'Yemkin', Almasy's Ford, en route to Uweinat.

No one realized then that the tiny Aqaba pass which he marked on his monograph's map would one day play a decisive role in a secret espionage operation during World War II.

## The End (Part II)

Nine years later, the great war broke out and spilled over into North Africa. When Hungary allied itself with the Axis powers in April 1941, the originally Hungarian Count de Almasy contributed his impressive experience to Rommel's troops in Libya. The Germans needed information and this meant planting spies in the Nile valley. After a series of failed attempts, they concluded that the only possible route to the Nile had to pass through the southern desert. All the other possible access passages through the desert were patrolled by the British under the command of R. A. Bagnold.

Almasy was the only person who had the know-how. Based in Libya, he prepared for one of the most daring voyages through the Egyptian Sahara. He led the German spies Eppler (H. Hassan Ga'afar) and Sandstede (Peter Monkaster) on a 12-day, 3000 km journey from Tripoli to Assiut via Jalo, Kufra and Gilf Kebir. As long as the road from Madrid to Moscow.

Half the route was uncharted. Desert-passionate Almasy used the map etched in his memory to locate the Aqaba Pass he had discovered nine years earlier. He even found water that he had hidden there beneath the sand. With such a memory, he confidently navigated toward the Nile. Like a true lion-hunter, Almasy passed through an Egyptian check point at Kharga by introducing himself and his companions as British officers. He even entered a military barracks to request fuel for his cars!

Having delivered the German agents, Almasy returned to Kufra alone through the desert. When he noticed fresh car tracks at the foot of Gilf Kebir, he understood that Bagnold's Long Range Desert Patrols had discovered al-Aqaba and that a trap was set. Having learned of the experiences of Bagnold, Prendergast and Kennedy Shaw, now leading the British patrols, Almasy could guess their itineraries and had to think of another way. The image of Gilf Kebir during his air surveying expedition was still clear in his mind. He used his bird's eye view to sneak into Libya from Wadi al-Furaq in al-Gilf al-Qibli, from which he crossed easily into Libya and safety.



*Tracing Almasy on top of Gilf Kebir; our car avoids the chaotic soft dunes that fill Wadi Assib, the critical valley that splits Gilf Kebir into two spheres.*

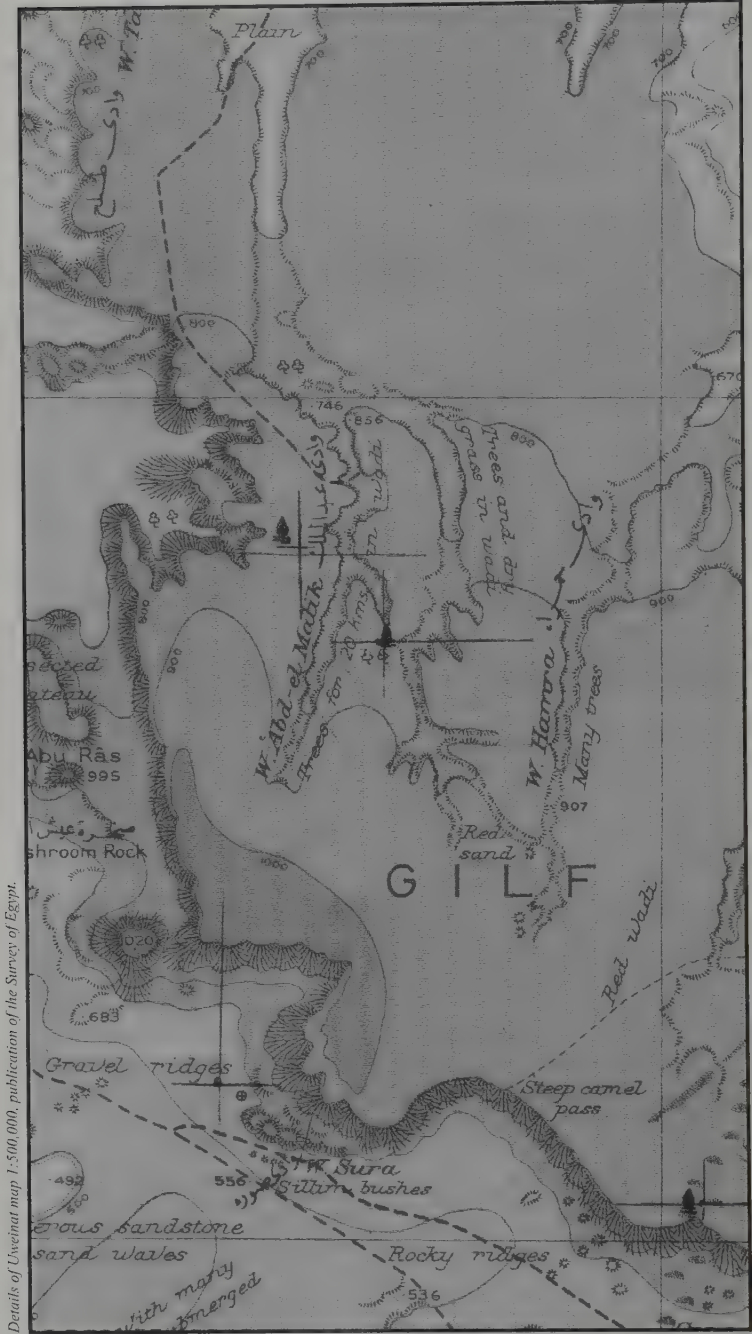
Almasy never led any other spy missions. The successful 6000km Kondor Mission was Almasy's last signature on the Egyptian sands. The Count died in Salzburg in 1951, far away from the desert where he left us an unbelievable drama that has inspired adventurers, soldiers, politicians and novelists.



*There are eight hills standing in a row in southeastern Gilf Kebir. Known as the 'Eight Bells', these dark cones bulge from a broken country, pointing westwards to Wadi al-Furq and eastwards to Bir Sahara. From the 'Bells', fork other routes that lead to Uweinat in the south and Abu Ballas in the north. Thereabouts we found petrol tins and a truck abandoned by the 'Long Range Desert Group' who were searching for Almasy.*

In 1992, Michael Ondaatje published *The English Patient*, a novel based on Almasy's adventures. Recast into film, *The English Patient* won nine Oscars in the 1997 Academy Awards Festival.

And the world began to wonder: is this true or just imagination? Did such man really exist? Let me try to answer these questions: Having traced the man's presence in Gilf Kebir, walked among the trees of his Zarzora oasis, slept in the cave of the swimmers in Wadi Soura and looked down from the highest point of the plateau at al-Aqaba pass, I am obliged to resolve the matter by saying that Almasy will always remain a living part of the plateau that resists the eroding winds of forgetfulness.



Details of Uweinat map 1:500,000, publication of the Survey of Egypt.

Map of northwestern Gilf Kebir showing the canyon valleys of Abdel Malik, Hamra and Wadi Talh.



## **JOURNEYS TO THE CORE OF ARIDITY**

### **Wadi Abdel Malik and the Zarzora Legend**

On the map of the Egyptian Sahara, the feature of a valley and the word "wadi" are almost non-existent. But when we focus on the arid Gilf Kebir plateau, we can count up to twenty canyon-like valleys. Some of them even bear the inscription "wadi with many trees."

In distant geological times, rivers cut through this massive plateau. The water snaked its way out to the plain carving the canyon-valleys of northern Gilf Kebir. Today, these valleys host an extraordinary ecosystem: they shelter a glimpse of life where animals, trees and greenery survive in the world's driest environment. Almost splitting the northern plateau's table-land into two, Wadi Abdel Malik cuts into its interior for nearly 80 km from north to south. It is the longest of all the Gilf Kebir canyon-valleys and is by far the richest in biodiversity. Walled-in by steep cliffs and formed of rocks dating back to the Ordovician and Jurassic periods (over 150 million years ago), the wadi's bed is covered by a more recent duvet of maroon-colored sand. This unique sandstone feature not only represents an incomparable scientific treasure, but is also a place of several tales.



*Wadi Abdel Malik after many years of drought.*

"I, Abdel Malik, have the following to say concerning the valleys I discovered: the Gufra oasis did not always belong to the Arabs. From time immemorial, it was the land of the Tebu<sup>\*1</sup> who owned all the places in the desert for ages. When the Arabs and Sennusi<sup>\*2</sup> arrived in Gufra, the Tebu abandoned the oasis and sought refuge in the Tibesti mountains that lie at a distance of fifteen-days camel march to the south.... It was the Tebu who [later] informed the Arabs that there were grazing grounds in Uweinat and pastures and palm trees in Merga<sup>\*3</sup>.

They also knew other valleys with good grazing such as Zarzora, but no Arabs knew that place. We only knew that there was a valley with an oasis called Zarzora...

We also heard that some people who lost their way in the desert had once found Zarzora and that they saw palm trees and a water spring there. The Sennusi sent out people to search for all these places, and a certain Mohamed L. was sent to search for Zarzora, but he returned to Gufra without having found the place"<sup>\*4</sup>.

<sup>\*1</sup> The Tebu are the original inhabitants of the Libyan Desert. They roam as nomads between the Tibesti mountains and the Kufra oasis in search of grazing grounds. Some Tebu families settled in Waw al-Kebir, Balzaba and Waw al-Namous. They are a negroid race and known as the best caravan guides.

<sup>\*2</sup> The Sennusi are Arabs of Bedouin origin who, under the leadership of Al-Sherif Ahmed al-Sennusi, became the most powerful tribe in the Libyan Desert. They are not a race nor a country nor a political entity nor a religion. They possess characteristics of all four. (A. Hassanein, 1925).

<sup>\*3</sup> Merga is an oasis in northern Sudan. This uninhabited oasis was discovered by prince Kemal al-Din in 1924.

<sup>\*4</sup> L. E. Almasy, *Recentes Explorations dans le Desert Libyque*, p.36, 1936.

## Tracing a Legend

In April 1932, the newly-discovered desert heard a sound it had never heard before. The silence dissipated behind the buzz of a tiny single-propeller aeroplane that flew over the western cliffs of Gilf Kebir. On board, two men sat in hope. Clayton and Count de Almasy were surveying the table-land of the plateau. That was their ostensible purpose. But deep in their hearts they both hoped to locate the vanished Zarzora oasis from the air.



Photo courtesy Hungarian Geographical Museum

Although they would leave without having sighted their wish-oasis, the desert kept pace with their romantic dreams. The Gilf Kebir rewarded Almasy and his companion with the first sighting of a long valley running north for as far as the eye could see. Following its course from the air, they saw trees and accumulations of greenery dotting a dark red floor. They recalled the legends of Zarzora and a fifteenth century Arabic narrative in *The Hidden Pearls*:

*"You will see palms, vines and springs. Go into the wadi and pursue your way... You will find another wadi running westwards between two mountains. From this last wadi forks a road which will lead you to the city of Zarzora, where you will find the city gate closed. This city is white like a pigeon, and on the city gate is carved a bird. Take with your hand the key in the beak of the bird, then open the gate. Enter... There you will find great riches, also the king and queen sleeping in their castle. Do not approach them, just take the treasure."*

Possessed by the thought that he had found Zarzora, Almasy prepared a motor-car expedition to explore the valley one year later. He started out from Kufra with a Tebu tribesman named Ibrahim as his guide. He guided them right to the entrance of the valley in three days of effortless driving.

To Almasy's surprise, Ibrahim the Tebu knew the valley. And its legend: Not long ago, the Sennusi, ruler of Kufra, wished the Tebu tribesmen's camels into his service to transport the oasis' merchandise to Siwa. The Tebu didn't dare refuse but escaped with their camels to some unknown place. The Sennusi launched a campaign in search of the rebels, said to have entered the desert heading southeast. They traced the Tebu into the then unknown valley where some camels were found and taken back to the Sennusi. As punishment, the Sennusi forbid the Tebu to graze their camels in that wadi forever. The man who led the Sennusi's men to their prey had the wadi -- Abdel Malik -- named after him as a reward.

It seemed as if everyone in the Libyan Desert knew the history of the place that had, until then, remained hidden from the twentieth century's explorers. But by the winter of 1932-33, the valley was no longer unknown. Both Patrick Clayton of the Desert Survey and Lady Dorothy Clayton, the wife of the late Sir Robert Clayton, led an expedition into the valley just weeks before Almasy. But as was his trademark, Almasy explored the area further and learned of all the Tebu's secrets in Gilf Kebir.

He learned of two other foliated valleys in the region. Wadi Hamra (Red Valley) runs parallel to Abdel Malik and Wadi Talh (Acacia Valley) twists westward between two mountains just as described in the medieval book *The Hidden Pearls*. "Talh, Hamra, Abdel Malik, what are these names? Isn't this Zarzora," Almasy asked in confusion.

"Not long ago," Ibrahim replied sorrowfully, "Abdel Malik was appointed by the Sennusi to graze his camels in this valley. Here he lived until the water hole dried. After he returned to Kufra, the valley was forgotten again. But it remained in the Tebu's memory as ever, passed by word of mouth from one generation to the next.



"We the Tebu," said Ibrahim proudly, "the original inhabitants of this desert, call this place Wadi Zarzora."



Photo courtesy Egyptian Geographical Society

*Wadi Abdel Malik, as seen for the first time, from the air (Almasy - Clayton Expedition).*

## **1939-1945**

*"By order of the British government all international expeditions to be aborted by May 1939".*

Although Almasy found the three valleys of the Zarzora myth, there was no sign of springs, white walls or castles. Yet the legend lingers on. When World War II marched into Egypt's northern deserts, the mysteries of the south grew dim and faded into the blazing fire of the north. Quixotic explorations were replaced by a series of surveying missions for future battle fields. Gilf Kebir and Wadi Abdel Malik were forgotten, again.

## **18.000 Sunrises Later**

We were close to the entrance of Wadi Abdel Malik. Having spent a whole afternoon looking for the wadi's mouth, we finally found it behind a transverse whaleback dune. We crossed the dune without difficulty and zigzagged our way through a valley carpeted with the red rippled sand that is the trademark of Egypt's southern latitudes. The valley ranged in width between a half to two kilometers, meandering left and right to the south. After 40 km, we still had not seen any vegetation

and began to suspect our navigation. If we missed the right entrance then which valley was this? As long as we were driving on hard sand, there was no fear of losing our tracks on our way back. Our main concern was fuel. We didn't know how far this old river bed would drift with us before having to beat a retreat.

So far away from the world we knew and so close to the land of legends, the myth of Zarzora tickled our thoughts. Not necessarily as a lost oasis, but as something each one of us carries deep inside: that our eyes would fall on something no one has seen before. Once upon a time. Almasy and Clayton aboard an aeroplane scouring the ground in hope. Each member of our expedition, although suspecting our navigation that day, was hypnotized by Zarzora. That's why no one mentioned our southward drift. But before these thoughts reversed into doubt and before the dream transformed into hope, we saw a stretch of greenery twinkling along the foot of the western wall. Then a tree. And then the valley widened and acacia trees were everywhere.



*Our camp in Wadi Abdel Malik where secrets were locked away for centuries.*

The doubts, thoughts and hopes vanished altogether. We managed to reach Wadi Abdel Malik all the way from Siwa through the isolated dunes of the Sand Sea. Still, Ibrahim the Tebu had called it Zarzora.

We toured the whole valley on that visit, by car and on foot. We rediscovered the ancient dry well Ibrahim had spoken of and investigated the two southern gorges that, like the tributaries of a river, snaked each its own way. We documented the wildlife activity, the geology of the area, the different plant species and archaeological finds.

Returning to my home in Sinai, my friend N. Galal of the Ras Mohamed National Park suggested that I share my experiences on Gilf Kebir with the director of the Gulf of Aqaba Protected Areas Program.



*Atop the plateau, nothing could be seen of Abdel Malik until its narrow gorge opened suddenly below us as if the plateau had yawned after a long undisturbed sleep.*

Two years later, our team was commissioned by the Egyptian Government to guide the first official Egyptian expedition to Wadi Abdel Malik. Unlike our first reckless arrival and amateurish identification of the ecology, our second visit to Wadi Abdel Malik was a component of the Egyptian Environmental Affairs Agency's plan to identify and assess selected desert regions for possible designation as protected areas. The scientific team included experts in archaeology, botany, animal life and geology. Our goal was to identify all the resources in the valley.



*The Rose of Jericho (*Anastatica hierochuntica*) carpets the table land of Gilf Kebir towards Wadi Abdel Malik.*





*A pod (top), flowering shoots (bottom left) and a thorny branch (bottom right) of an Acacia raddiana tree (center). For centuries the Tebu grazed their livestock here when no other pastures were available elsewhere.*





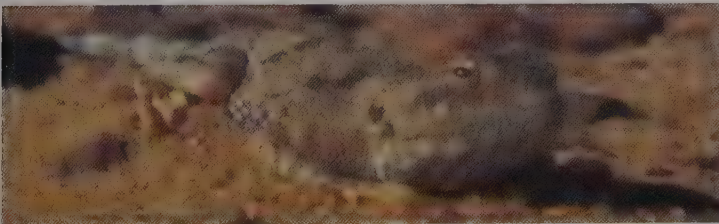
**February 8, 1997**

Tonight's twilight brought with it the crescent moon that foretold of the end of the holy month of Ramadan. We were to feast in Abdel Malik's valley. We had descended into that canyon through a southern passage in the steep cliffs. Unlike our previous approach, we chose to cross the Gilf Kebir from east to northwest over the uncharted top of the plateau. Atop the plateau, nothing could be seen of Abdel Malik until its narrow southern gorge opened suddenly below us as if the plateau had yawned after a long undisturbed sleep.

The passage leading to the wadi's floor was dangerously steep and blocked by a careening sand-wave. The rocky descent could easily puncture the underside of our loaded jeeps, while the sand choking the passageway swallowed the bottoms of all the cars, hiding the dangerous jagged edges. It took us three hours to get the four Toyotas down the Lama-Monod Pass.

Although we had entered the core of the largest hyperarid areas on earth, the tents of our base camp were surrounded by some thirty living acacias and dozens of small shrubs. There were fresh tracks of several mammals and reptiles which proved that rainfall occurs, though irregularly. It is because of the scarce and erratic rainfall that the plant and animal life which inhabits Abdel Malik is superbly adapted to survive in one of the most inhospitable environment on Earth.

Early next morning, we breakfasted near the entrance of the southern gorges that we were about to investigate. Protected from the abrasive wind, we enjoyed the sun's warmth in the bosom of the valley. In the seven days atop the plateau, we had suffered the raking wind every morning and temperatures of  $-2^{\circ}\text{C}$  at night. Abdel Malik hosted us like honored guests.



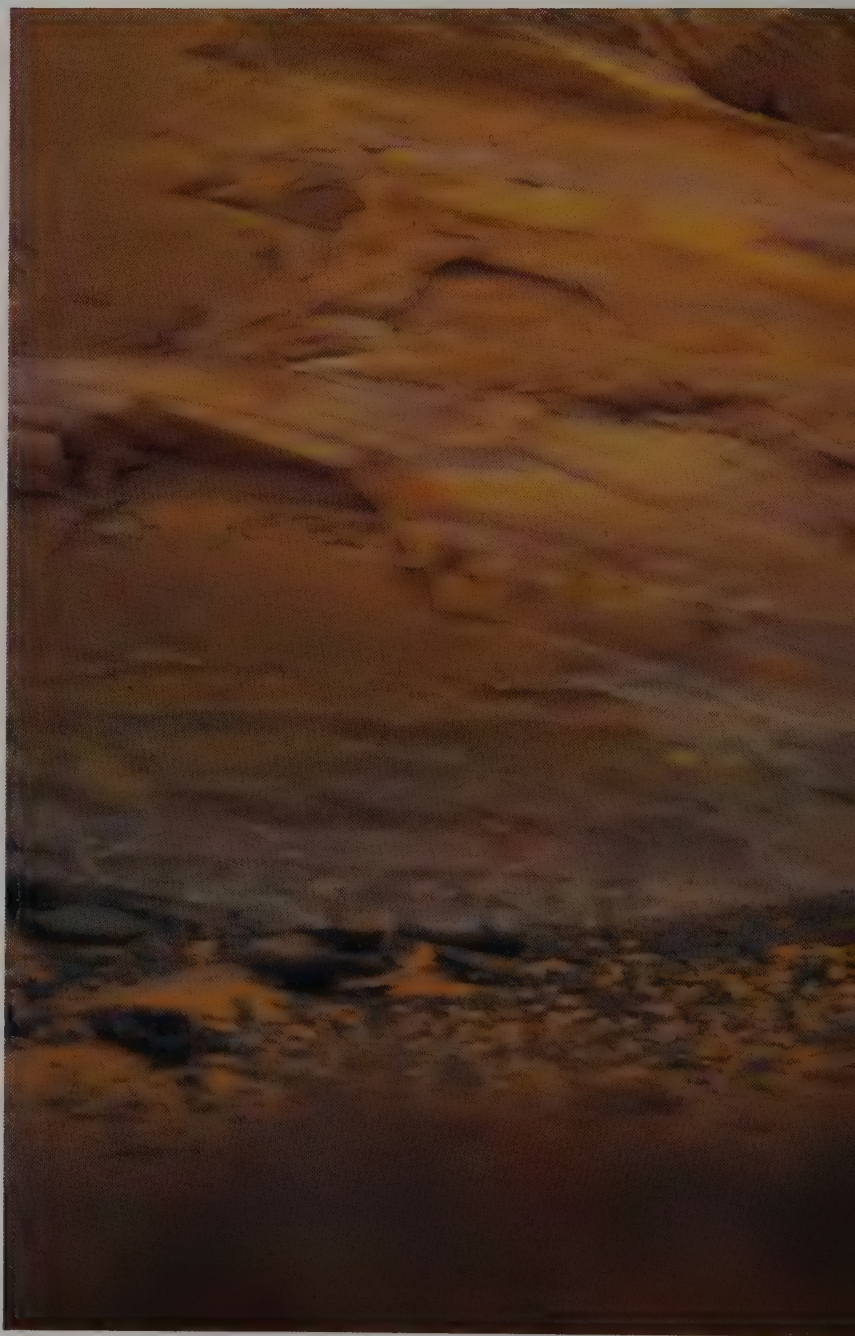
*The apparently lifeless sand-surface we had become accustomed to during the day turned out to host a hive of activity during the night. The night visitors' signature tailed of beetles, jerboas, gerbils and a variety of other nocturnal insects and reptiles.*



*The arid cliffs separating Wadi Abdel Malik from Wadi Hamra. Surrounded by wind-swept plains and covered by red sand dunes and jagged rocks, the landscape here resembles Mars.*







*"March in front of yourself like the first camel of a caravan." (Moorish proverb)*





## Notes on Ecology

The two southern gorges are alike though one is longer and relatively richer in animal and plant life. The signs of recent rainfall which we had noted during our 1994 visit were covered by a thin layer of drift sand. Most of the shrubs had been suffering from five years of drought.

Prof. L. Boulos, the expedition's botanist, claimed that the roots of some mature trees penetrate as far as 20 m beneath the surface to where permanent moisture supplies them with their water requirement. To the south, he recorded a large number of *Acacia raddiana* trees and a high concentration of *Fagonia thebaica* and *Zilla spinosa* (L. Boulos *et al.* 1997).



To survive in this hostile environment the enduring *Waddan* search the surrounding cliffs for stored rainwater. Some do not make it.

We reached the end of the western gorge at a place where it narrowed to 40 m before curving due west and halting abruptly. We found the richest biodiversity there. In that protected niche, most of the plant species that lived in the vicinity of northern Gilf Kebir were represented. This included the tough *Maerua crassifolia* trees, the common desert gourd *Citrullus colocynthis*, *Monsonia nivea*, *Trichodesma africanum*, *Pulicaria incisa* and other mostly dried out plants. All in all, Boulos recorded 22 species of flowering plants from 12 different families, half of which were in particularly good condition.\*

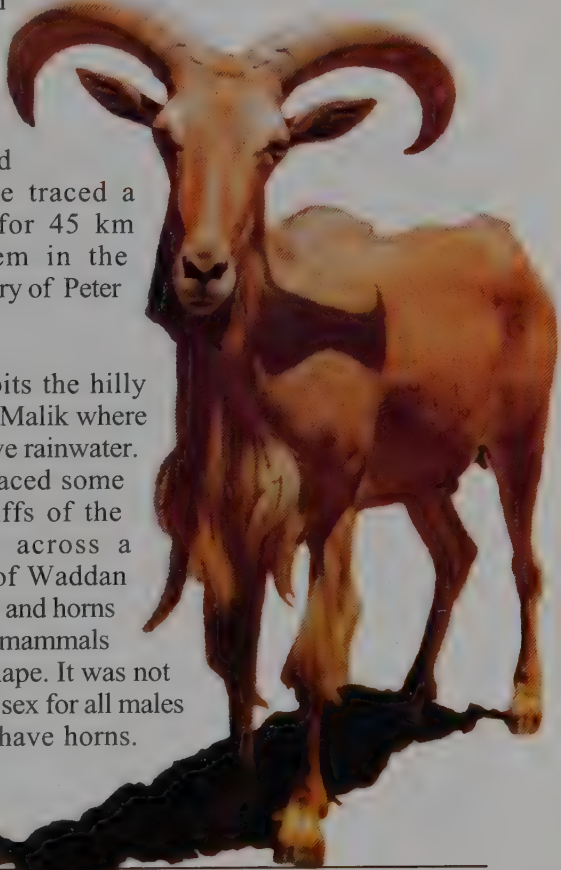
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\* L. Boulos & H. Barakat, Report on the Flora of Gilf el Kebir & Gebel Uweinat, EEAA, 1997.

We found Abdel Malik's ancient water hole in a cave. The entrance of the cave was hidden behind a sloping sand drift a few meters above the wadi's floor. We had to crawl to get to where the water once collected. At one time, this tiny reservoir seems to have supported some kind of Neolithic settlement for we found intact rock shelters and lithic artifacts. Although other evidence of prehistoric man can be found in the gorges branching off from Abdel Malik, this was the richest site of all.

The depth of Wadi Abdel Malik makes it a natural wildlife refuge. The endangered Barbary Sheep *Ammotragus lervia orantus*, for example, survives only in this part of the Egyptian Sahara where it is called Waddan. A relative of the Antelope family, this species lives in mountainous areas, always awaiting a generous cloud. In its desperate search for water, the beast sometimes traverses the area between Gilf Kebir and Uweinat. We once traced a Waddan's tracks for 45 km before losing them in the volcanic rocky country of Peter & Paul\*<sup>1</sup>.

The Waddan inhabits the hilly areas around Abdel Malik where natural pools preserve rainwater. One afternoon, I traced some tracks over the cliffs of the valley and came across a terrifying number of Waddan carcasses. The skulls and horns of these endangered mammals varied in size and shape. It was not easy to identify their sex for all males and many females have horns.



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\*<sup>1</sup> Two hills situated between Gilf Kebir and Uweinat.

Not far from the water hole I found another cave five meters above the wadi's floor. Inside, the skeletons of many perished Waddans were scattered about. The only reference for size and skin that I found belonged to an animal that had died recently enough to still have its smooth sand-colored coat covering the bones. The skull was 35 cm long and the forehead measured 18 cm. The hollow horns curved to the outside and measured 45 cm in length. The hoofs, rather small in relation to the rest of the body, lay next to each other. It was difficult to measure its exact height but it was roughly 1.10 m high at the shoulder, 1.05 m around the belly and 1.15 m from head to tail.

We came upon an even more surprising find the following day, the remains of a gazelle. Gazelles have never been seen in Gilf Kebir. Because there were no other gazelle tracks in the valley, I guessed that it had gone astray here perhaps coming from Kufra or from that unnamed foliated wadi at the southwestern edge of the Sand Sea. Between the Sand Sea and Kufra, to the north of Wadi Qubba, there is a canyon that runs from north to south. There we found some twenty acacias, prehistoric blades made of Silica Glass and remains of sheep and gazelles.

The apparently lifeless sand-surface we had become accustomed to during the day turned out to host a hive of activity during the night. The fresh tracks of the Sand fox (*Vulpes rueppelli*) outside my tent drew a beeline to the camp's kitchen. The night visitors' signature revealed our guests as beetles, jerboas, gerbils and a variety of other nocturnal insects and reptiles.

## **February 10, 1997**

I woke up early to photograph an acacia tree I had observed blooming two years earlier. It was a good example of a tree suffering from several years of drought. With the photographs, I could compare its present and previous conditions.

I walked briskly in the fresh breeze. There was no greenery north of the camp. Abdel Malik appeared colorless and lifeless until the sun flooded it with soft light. A wheatear that the Arabs call *Zarzor* whistled in the air. I've seen this black and



white bird (*Oenanthe leucopyga*) in several places in the Egyptian Sahara, often in the remotest regions. *Zarzor* followed me through the valley. When I kneeled down to examine a Neolithic grinding stone it landed on my camera case, shook its tail up and down and shared my find.

When the acacia tree appeared at a distance, I thought of the one person who had inhabited this valley, Abdel Malik Ibrahim al-Zuwaya, the man.\* I tried to imagine the way he lived in this isolated place, a place of life in death, bearable by its adapted inhabitants, but absolutely forbidding for human beings. What did he do and how did he live? What did he see that we cannot see today?

The wadi's walls echoed my silent questions. I had only my imagination to inspire answers. All I heard in Wadi Abdel Malik was the whistling of my friendly companion, *Zarzor*.



"... They also knew other valleys with good grazing such as Zarzora, but no Arabs knew that place."

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\* Of Libyan origin, the Zuwaya is a large tribe that inhabited the Fezzan desert in southern Libya. At the turn of this century they migrated to Kufra and Barqa, and to Waddai in Sudan. Having gained incomparable experience with desert geography -- as they roamed the wastes in search for grazing ground -- the Zuwaya tribesmen led the Kufra trade caravans to Egypt and Sudan. At the foot of Uweinat mountain, there is a water pool that is named after them, Ain Zuwaya.



*Abandoned by the rain that once fed it, the remains of a dried-out prehistoric lake resist the winds of diminishment. The discovery of more such horizons, preserved*



*in the arid climate, may help in the interpretation of past climatic fluctuations in the Sahara, where the evidence is still largely out of reach by difficulty of travel.*





# HUMAN GEOGRAPHY

## ABU BALLAS: THE POTTERY HILL

The desert has preserved the past the way the Pharaohs preserved the human body. The ancient Egyptians used unknown potions and secret rituals; the desert uses its natural phenomena: the wind, sand, and extreme aridity.

The pottery fragments and so-called water jar depots scattered in isolated desert spots have been conserved this way. These not only symbolize the early movements and distribution of long-vanished desert-dwellers, but also represent different cultures who lived in various periods of a yet vague desert occupation.

The water jar depots were originally linked to camel caravans. When an accumulation of water jars is found along or nearby a caravan route (i.e. the depots of Abu Zala'a to the north of Qatrani, Tafaseekh to the south of Moghra and Weseyya west of Qattara) then it seems logical to conclude that these depots served as water storage stations for armies, trade caravans or occasional hunters. However, other accumulations of jars have been found far away from the known desert routes. The presence of these water jars has long been inexplicable.



*A wind-excavated graveyard along the ancient caravan route  
between St. George and Al-Riss.*



*"I shall now mention a thing of which few of those who sail to Egypt are aware.  
Twice a year wine is brought into Egypt...in earthen jars;*



*and yet in the whole country you will nowhere see a single jar. What then, everyone would ask, becomes of the jars?" (Herodotus, Book III).*

## **A Secret Depot**

We were 260 km southwest of Dakhla. Protected by the southern limits of the Sand Sea where knolls and outcrops decorate a vast sandy plain, a cairn marks a particular hill. Abu Ballas. Rising above a wind-swept history, this hill is a valuable archaeological site and, like Regenfeld, has become a traditional destination point.

Before and during World War I, the Sennusi of Libya organized resistance to Italian, French and British influences. Under the military leadership of Ga'far Pasha, the Sennusi's followers captured the oases of Girba and Siwa in 1915. They then planned to march to Fayoum with the intention of inciting the tribes that were disaffected with British rule.\*<sup>1</sup>

This gradually rising threat on Egypt's western frontiers disconcerted the British and irritated the Italians. In retaliation, the British managed to temper the Sennusi's plans by a two-pronged strategy. First, they starved him out by very strictly regulating all food-stuffs and supplies to the oases. Then they awaited his evacuation, patrolling the region by camel and by car. The Light Car Patrol was then commissioned to secure the desert around the Dakhla oasis -- then a Sennusi recruiting base that the British air force had recently bombed. Until 1916, Dakhla was the furthest known spot on the map of Egypt. Beyond this oasis a desert stretched as endlessly as the tales told about it. From this desert came "slender men with white scarves veiling ebony-black faces... They suddenly attacked, stole the camels, [and] the women before disappearing the way they came."\*<sup>2</sup> Such legends were the only information obtained from the natives of Dakhla about the surrounding desert.

When the Light Car Patrol was assigned to enter this unsurveyed territory for the first time, John Ball, a surveyor, was recruited to map the southern limits of the Sand Sea and all that came across the patrol's way. He joined Lieut. Moore, the patrol-commander, and set out southward from Dakhla. To avoid the Great Sand Sea, the patrol turned clockwise around the southern edge of the massive dune-field. Although they managed to advance for 300 km due southwest, like Rohlfs in 1874, they saw no sign of the dunes' western limits.

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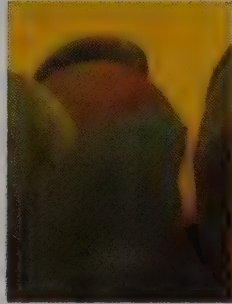
\*<sup>1</sup> *Fayoum is the nearest of all the oases to the Nile. So close to civilization, this large and fertile oasis is no longer a part of the desert. Some hundred years ago, many Libyan tribes settled there. The Sennusi sought the Jihad amongst them.*

\*<sup>2</sup> *Harding King, The Libyan Desert from Natives' Information.*



The patrol eventually had to return, not because of the Jinn that the oases' natives believed inhabited this desert, but against the increasingly rough terrain and lack of supplies. They withdrew along a more southerly course and by pure coincidence came upon the water jar depot. Stowed at the southern foot of the hill, the jars could not be identified. The spot, however, was marked on the map with the tiny inscription "Pottery Hill".

Unlike Lieut. Moore who continued his patrolling missions, John Ball returned to the jars in 1923. Accompanied by Prince Kemal al-Din Hussein, they found and excavated several hundred additional jars at Pottery Hill. They also found a number of drawings carved on the rocks. Kemal al-Din gave the site its Arabic name, Abu Ballas, and later sponsored further archaeological studies there. However, no definite explanation has been put forward to answer the early questions raised by the 1916 patrol. When, by whom, and why was this pottery placed at this isolated and geographically inconspicuous hill?



Abu Ballas was always a navigation point for us. From the Sand Sea, on approaches to Gilf Kebir or on our return route from Uweinat, the site beckoned us. Like Kemal al-Din, we found the broken jars at the foot of the northern slope and the fading drawings on the southern walls of the hill. There were hundreds of shards but not a single intact jar. Kemal al-Din reported some 300 jars, but according to our estimations, there remained some 100 large pieces on our first visit in October 1994 and only some 70 pieces in January 1998. Most were half buried and filled with sand.

Why the sand didn't bury the jars completely remains a mystery. Even the pale shards floated on the rippled surface or sank just below. These jars were made of different types of clay. Varying in size and shape, they ranged in thickness between 5 and 15 mm. They also varied in color, but it was hard to tell whether they were made this way or if the blasting wind had faded the deepest reds. Although stripped of their surface layers, the jars seem to belong to various periods and perhaps even different cultures.

## **Different Interpretations**

The early discoverers diligently conjectured on the origin of this earthenware, then emulated other concerned parties in search for answers. Although Abu Ballas had established itself as a traditional site after Kemal al-Din, the few groups that actually investigated the origin of the jars established different opinions on this matter. We carried all the prudence of the early literature with us when we sat to discuss the value of this pottery at the foot of Abu Ballas.

Naturally, the first man to have thought of the jars' origin was John Ball, the man who found them. In the *Geographical Journal*, Ball wondered if Abu Ballas could possibly be the lost oasis of Zarzora. "Is it possible that 'Zarzora,' which I am told signifies in Arabic a starling is here a corruption of some other name derived from 'zeer', a water-jar, and instead of 'the oasis of the blacks,' Zarzora was really 'the water-depot of the blacks?'"\*

Supporting this hypothesis, Kemal al-Din found that the majority of the jars bore clearly incised markings. Later, he was able to identify these signs as being tribal marks of the Tebu, the original black inhabitants of the southern Libyan Desert. It turned out that the marks are exactly the same as those used by the Tebu in the 1920s.



*The pottery which once held water now holds only secrets. However, here is a pottery shard with a square tribal sign like those mentioned by Kemal al-Din.*

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\* J. Ball, *Problems of the Libyan Desert*, *Geographical Journal*, 1927.

Theoretically, the jars may have belonged to the Tebu, but linking the depot with the oasis of Zarzora could only come from one perspective: that the Tebu themselves came from this oasis. Because their homeland was far away in the Tibesti, or even in Wadi Abdel Malik, Abu Ballas then would only have been a midway station, and not 'Zarzora' itself.

Almasy arrived at Abu Ballas early in 1933. While staring at the unmistakable shape of the classic Greek amphora, he read his copy of Herodotus: "I shall now mention a thing of which few of those who sail to Egypt are aware. Twice a year wine is brought into Egypt from every part of Greece in earthen jars; and yet in the whole country you will nowhere see a single jar. What then, everyone will ask, becomes of the jars?" Herodotus eventually explains that the jars were used to maintain the passages into Egypt by storing water for weary travelers. Almasy entered the desert hoping to find answers to the "historic problems of the Libyan Desert".\* One of those was the riddle of the Persian army that had vanished from the face of the Earth while on its way to Siwa in 525 B.C.

Where could such a buried army be found? Which route did it take between the Great Oasis (Kharga-Dakhla) and Siwa? Having tried to find answers, Almasy's expedition supposed that the jars at Abu Ballas may have been deposited to secure the Persians' march into this waterless desert.



*Stone-tools and pottery fragments of Neolithic origin, widely spread over much of the southern tracts, inspired the suggestion that the pottery at Abu Ballas may date back to a prehistoric occupation.*

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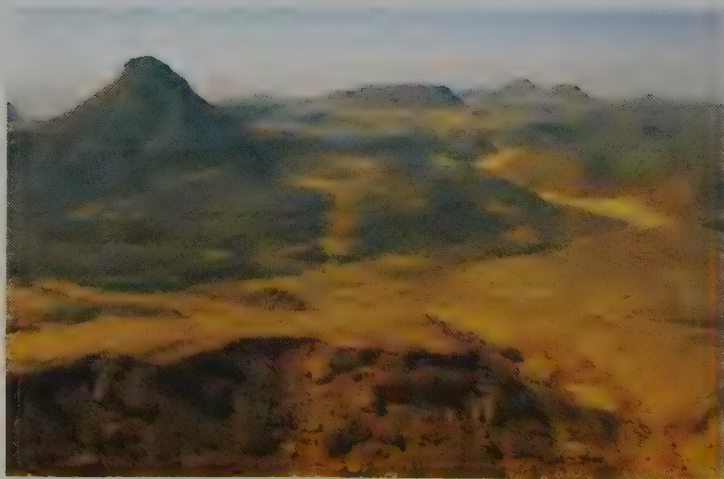
\* Richard Bermann, *Historic Problems of the Libyan Desert*, *Geographical Journal*, Jan. 1934.

They guessed that the jars could be about 2500 years old. The only piece of evidence that supports their hypothesis -- one of the rock drawings at Abu Ballas -- was dated by a French cave drawing expert, H. Breuil, to the 4th century B.C. (2400-2500 years ago).

Much like the early explanations, recent reports on the origin of the jars and the historical role of Abu Ballas also diverge. Interested in generating a precise study on Abu Ballas, two parties investigated the site in the 1990s. The first was the Lama-Monod party of 1993, and the second was our 1997 expedition to southwest Egypt on behalf of the Egyptian Environmental Affairs Agency. The first concluded that although the surroundings of Abu Ballas contain sundry evidence of an early human occupation, the jars themselves belong to a more recent period of "300 to 200 years ago".\*<sup>1</sup> Our expedition's archaeologists dated the site to "a late pharaonic period" suggesting that Abu Ballas might have also been significant as "a pilgrimage spot".\*<sup>2</sup>

### **Inherited Tales**

While the existence of such a depot remains scientifically enigmatic, those who live closer to Abu Ballas have other explanations to offer.



*The cliffs of western Gilf Kebir: A view looking down from its highest point (1057m) at a maze of waterways meandering towards Wadi Soura.*

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\*<sup>1</sup> Max. Dauber, *Pers. Comm.* 1998.

\*<sup>2</sup> Barakat & Hemdan, *Report on the Archaeology of Gilf Kebir/Uweinat*, EEAA, 1997.



Hadj Shalabi was one hundred and twenty three years old when I met him in Dakhla in 1994. He had assisted Major Jarvis in the preparations for Kemal al-Din's first expedition to Regenfeld and Abu Ballas in 1923. Hadj Shalabi believed that the depot was the property of the 'Razzouz' -- the polished people -- who raided the Dakhla oasis in former centuries.

"Throughout history, Dakhla was fertile and famous for its dates and riches. This very same blessing attracted desert-pirates... There were other places where pottery has been located, and all we could think was that the black raiders used them as supplying stations along their waterless routes that come from Africa." The old man's stories confirmed those of Harding King, the British traveler who roamed the desert in search for Zarzora. "Some very tall black men, with long hair and long nails, came up out of the desert [to the oasis] and stole the bread at night."\*

Where did they come from? Because no answer was found, the Mamlouk Government of the mid-18th century destroyed all the wells that lay within a few days' travel from Dakhla in order to stop these attacks. But the Razzouz attacked once more.

The last big attack came from the "southwest" in the middle of the 19th century. The inhabitants of Dakhla traced the invaders and found the answer to their mystery. The invaders had placed a secret water depot at the foot of a distant hill. There were hundreds of well-sealed pots containing between 10 to 20 liters of water each. Some contained grain instead of water. The spot was a perfect ammunition station, enough to give life to a raiding caravan that had traveled in the limitless desert between Dakhla and the rest of the Sahara. The Dakhla warriors destroyed all the jars. That will explain why all the Abu Ballas jars were found broken, unless, it was the 1916 Patrol that destroyed them, thinking they were of use to the Sennusis.

From all these stories and studies -- neither having authority over the other -- the only possible conclusion is that there have been defined routes through the desert for ages. People like us

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\* W. H. King, *Mysteries of the Libyan Desert*, 1925, p.75.

only discovered them early in this century. Abu Ballas seems to be one of the way-points along the trail between Dakhla and some unknown place. Whether these caravans and people came from Uweinat, the occasional settlements in Gilf Kebir or from the lost oasis of Zarzora, no one can tell. Even those rock drawings and inscriptions could not be dated with accuracy and, probably, more of these will be found on other neighboring hills. We chose to investigate Abu Ballas because -- as I mentioned before -- it has become a tradition.

### **Epilogue**

Not far from Abu Ballas, rock shelters dating back between 8300 and 6300 years ago were discovered. (J. F. Sers, *Desert Libyque*, 1993) There were remnants of an early Neolithic settlement. The ground was littered with lithic artefacts and a drawing of a giraffe was found on a rock wall. These were the remaining relics of an epoch when this part of the desert bloomed.

Egypt is not merely the Nile valley. Far out in its southern desert an unwritten history exists. There, primitive stone-tools speak of early human evolution and delicate drawings detail the dawn of social and economic development. This is the other Egypt, the one we ventured to document.



*Prehistoric tools found on the top of Gilf al-Qibli*

## PREHISTORIC GILF KEBIR



Long before the first Pharaoh ascended Egypt's throne, an unknown and relatively advanced human society flourished in the deep desert west of the Nile. Until about 10.000 years ago Gilf Kebir hosted a much wetter climate than today's hostile aridity.



The dramatic environmental changes that dominated the region brought about two simultaneous phenomena. The weather grew increasingly drier, but this gradual desiccation was followed cyclically by an atmosphere with sufficient water vapor to create precipitation over Gilf Kebir and the neighboring Uweinat region. The desert landscape in prehistory corresponds with today's grasslands of East Africa. Until 4000 B.C., the region was inhabited by an unknown people who lived on hunting antelope, gazelle, giraffe and other species that roamed the semi-dry savanna ecosystem.

Throughout the Sahara, lakes and swamps developed from rainfall in former millennia. Much like today's Saharan nomads, those who wandered as hunter-gatherers, those who caught and trapped game and collected fruits and seeds, and those who dug for roots and tubers were attracted to the simplest life form. Around the lakes they gathered and formed small communities that settled near the best grazing lands. By the end of this epoch the skills required for basic agriculture and animal husbandry were mastered.

Due to the lack of information, some researchers doubted the origin of the flaked implements found throughout the desert, thinking that they were caused by natural phenomena. However, more solid evidence came after the further discovery of large amounts of flint tools that appear to have been sharpened by a similar technique. These basic tools were found at several sites within the boundaries of the Gilf Kebir plateau, and always associated with animal or plant remains. This evidence proved that people have long inhabited the now forbidding land from which the early explorers returned reporting on an immense human treasure.

By the begining of the 1930s came the announcement of finds that demonstrate the importance of desert people in the later prehistory of northeast Africa. A number of prehistoric settlements have been discovered between Gilf Kebir and the Nile valley. In 1931, Messrs. Caton-Thompson and E. Gardner reported on prehistoric sites within the Kharga depression, the closest oasis to Thebes, the ancient capital of Egypt. They excavated Palaeolithic sites dating from 250.000 to 30.000 years ago.\*

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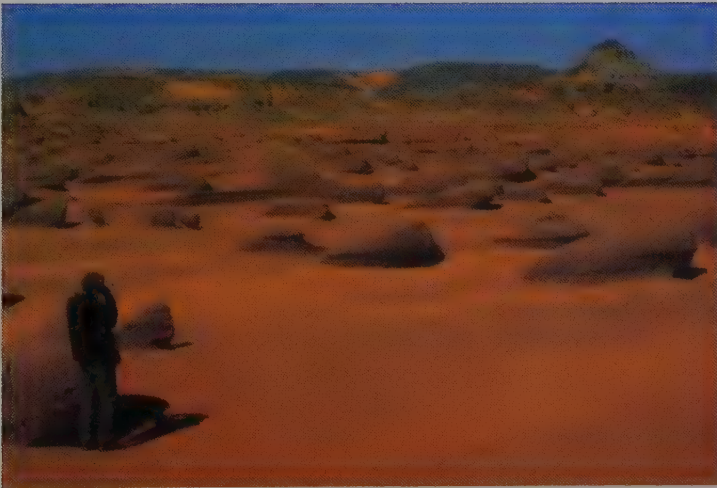
\* G. C. Thompson, *The Prehistoric Geography of Kharga Oasis*, *Geographical Journal*, Vol. LXXX, 1932.



Caton-Thompson characterized her new found antiquity, the "unmistakeable arrowheads", as a "...formidable mechanical force...able, if its possessors so desired to impose their territorial or other wishes upon neighbors as well as outdo them in hunting prowess..."(Caton-Thompson, 1946).

A few years later came the records of Leo Frobenius and Almasy. They discovered a number of sites in Gilf Kebir where rock-drawings indicate early settlements. These were followed by J. Arkell's report of similar finds in northwest Sudan. "Indeed I should not be surprised if they were connected in some way via the Libyan Desert with the artists of predynastic Egypt."\*

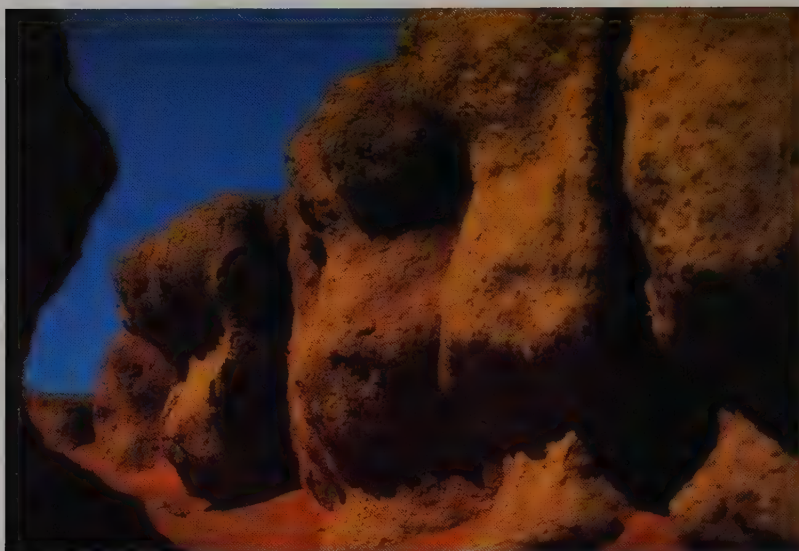
The obscure picture began to clear. This chain of prehistoric sites seems to draw a line connecting the desert's interior with the Nile and it became certain that the stone tools were indeed flaked by man. How did these people live? What sort of economic structure did they maintain? Where did they go? Did they move to the Nile Valley? Did they start the ancient Egyptian civilization of the Pharaohs? Could answers for such questions be dug out from Gilf Kebir? We traveled to the remote plateau to investigate.



*From the distance they appeared too symmetrical to be ignored. At the foot of the eastern cliffs of Gilf Kebir, mud-lions (yardangs) narrate the history of climatic changes in the Egyptian Sahara.*

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\* A. J. Arkell, *Rock Pictures in Northern Darfur, Sudan Notes & Records, Vol. XX, 1937.*



*In Wadi al-Bakht, eastern Gilf Kebir,  
playa deposits of an ancient water  
channel; evidence of the drastic  
environmental changes that dominated  
the highlands of southwest Egypt.*



## Wadi al-Bakht

Wadi al-Bakht meaning the "valley of fortune" was not explored until the arrival of Bagnold's Expedition in 1937. Joined by the archaeologist Oliver Myers, this expedition laid the foundation for archaeological research in Egypt's remotest valleys. Having excavated prehistoric pottery fragments along the Nile, at Armant, Myers guessed that "the true connections of this culture are to be found in the Sahara" (Mond and Myers 1937 I:268) To prove his theory of what he called "Saharan culture", Myers set out for the faraway prehistoric sites of Gilf Kebir/Uweinat about which came the reports of several explorers. His guide, Ralph Bagnold, had visited Gilf Kebir in the course of a geographical exploration program. As none of the eastern valleys of the plateau had been previously explored, they tried their "fortune" in Wadi al-Bakht.

Wadi al-Bakht is a sandstone canyon that drains into the vast plain east of the Gilf Kebir plateau. Inside, a unique dune cascades off the northern cliff and blocks the valley that narrows gradually into a steep-walled gorge. At this point, thick playa sediments are exposed in the form of an ancient waterway, behind which a silt (mud deposit) lake bed is powdered over by drift sand. This lake seems to have developed during the last humid epoch (around 9,000 years ago?), when it supported some form of life.

Oliver Myers found a considerable amount of chipped stone implements and milling stones for preparing food and pottery. These suggested "a wide range of human activity, including storage, transport, light woodworking and even, perhaps, agriculture."<sup>\*1</sup>

"The presence of ceramic technology at Wadi al-Bakht indicated not only a relatively late prehistoric age for settlement, but also a degree of occupational persistence and a variety of activities involving manufacture and use of pottery. If manufactured in the valley itself, the pottery demands, in addition to the technological knowledge and skills, the presence of suitable raw materials, clays and flammable materials (vegetation)."<sup>\*2</sup>

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<sup>\*1</sup> M. Hoffman, *Egypt Before the Pharaohs*, p. 232.

<sup>\*2</sup> W. McHugh, *Annals of the Geological Survey of Egypt*, Vol. XI, 1981, p. 325-27.

"The presence of pottery presumes the need for solid vessels for storing and transporting food stuffs and liquids... Pottery is after all, peculiarly related to food. The presence of pottery and milling stones in the vicinity of Wadi al-Bakht combine to form a strong case for the utilization of some kind of a cereal grain."<sup>\*1</sup> Although it has been proved that this remote valley witnessed a critical era of human development, the question remains: What happened to these Neolithic communities that lived in the vicinity of the lake at Wadi al-Bakht? A study on the southern Libyan Desert suggests that "an amphibious landscape emerged which survived several thousand years of unstable equilibrium. As the area subsequently grew increasingly arid, the inhabitants were unable to adapt and finally had to abandon the area some 3,500 years ago."<sup>\*2</sup>



Map based on Satellite image by Conoco.

**Map of the Southern Gilf Kebir (Al Gilf Al Qibli)**  
showing expedition routes (1995 - 1997)

<sup>\*1</sup> W. McHugh, *Annals of the Geological Survey of Egypt*, Vol. XI, 1981, p. 325-27.

<sup>\*2</sup> Deutsche Forschungsgemeinschaft (DFG), *The Water of the Desert*, 1997.

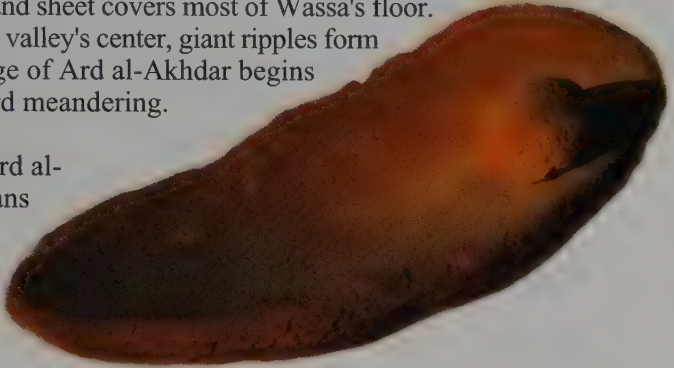


## Wadi Ard al-Akhdar

Ard al-Akhdar is a branch of the Gilf's widest valley, Wassa, which splits the main body of the plateau from its southern tip. One of a series of canyon-like valleys that cut into the Upper Gilf, Wadi Wassa was formed by the agencies of running water and active wind erosion over the course of millions of years. A smooth sand sheet covers most of Wassa's floor.

Towards the valley's center, giant ripples form and the gorge of Ard al-Akhdar begins its northward meandering.

Although Ard al-Akhdar means "land of green", this valley is as barren as its sheer cliffs.



*A grinder from a Neolithic period (7000 years old?) found at Wadi al-Mashi.*

Three poor Sella shrubs *Zilla spinoza* were the only green we saw during our 60 km drive through the canyon. Much like Wadi al-Bakht, that lay about 30 km away, the upper part of Ard al-Akhdar is characterized by ancient lake deposits. The aerodynamically shaped playa that Bagnold discovered in 1938 indicates, very obviously, a period of intense precipitation. During that period (10,000 years ago?), a dune -- similar to that at Wadi al-Bakht -- blocked the water and formed a one kilometer across lake. Prehistoric nomad groups knew of such places, perhaps in the same way camels smell rain. They would settle around such a lake, establishing the very same culture that would manufacture -- for basic survival -- the very stone implements we find today.

We found eroded playa deposits bordering a 25m-wide channel with dead plants stretched along its sides. Enclosed by hills of basalt, the former lake covered much of the wadi floor. But we found no artifacts or drawings, not even the tent rings mentioned by Myers as "the first ancient nomad dwellings excavated in the Middle East".



The early finds in Wadi al-Bakht and Ard al-Akhdar provided reasonable evidence of climatic changes. Yet they did not answer Myers' question: Did economic changes like herding and possibly farming reach the desert before the Nile valley?

### **The Western Side of Gilf Kebir: Wadi Soura**

The western edge of Gilf Kebir is nothing but sheer unbroken cliffs hiding a vast lifeless plain. However, this was not the case during the Pleistocene epoch which coincided with Europe's glacial period. For thousands of years, hunter-foragers armed with stone tools lived here. Despite the variation in rainfall, communities lived and cultures flourished. The documents they left are hidden on the western walls of Gilf Kebir, the far side of the plateau.

It is April, 1931. Ali Fudail is driving and next to him sits Patrick Clayton of the Desert Survey sketching a yet uncharted western Gilf Kebir. The cliffs appear unbroken and the single car was already 200km away from its base camp. The desert stretched endlessly and so did the cliffs. Before deciding to return, they spotted a bush at the foot of the scarp. As Clayton approached the cliff to investigate, a whole gorge came to sight

from a perforation in the steep walls. There were no other bushes, but "evidence of ancient habitation was all about: stone grinders, fragments of pottery and drawings of giraffe and gazelle scratched on the cliff walls."<sup>\*1</sup>

Clayton returned with Count de Almasy the following year to complete the exploration and investigate the rock drawings in the valley they named Soura. It was almost impossible to date these remains using the archaeological dating methods of the 1930s. Even the Almasy-Rhotert expedition that followed in 1933-1935 could not link the pictures and artifacts with any degree of certainty. Until further research was possible, the most reasonable studies dated the evidence to the late Neolithic period.<sup>\*2</sup>

The crimson rock drawings reside on the front walls of two shallow caves. The entrance of the larger cave, which may have been used as a shelter by at least one large family, faces north and rises above a dry water course that is choked with sandstone boulders. The drawings show human figures staring -- with no eyes -- at the infinite desert.

Soura's drawings are unlike those of Uweinat. Very neatly crafted and repeating themselves as in a series, they appear to have been drawn at different times. Some overlap others in a way that indicates several layers of painting.

In the center is a perfect negative hand-print engraved into the stone. Could this be the painter's signature or a religious symbol? What about the images of the flying figures? Is this actual flight or did beings from outer space visit Gilf Kebir? Or are the flying figures swimming in invisible water, telling us of the stream that once flowed in this area?

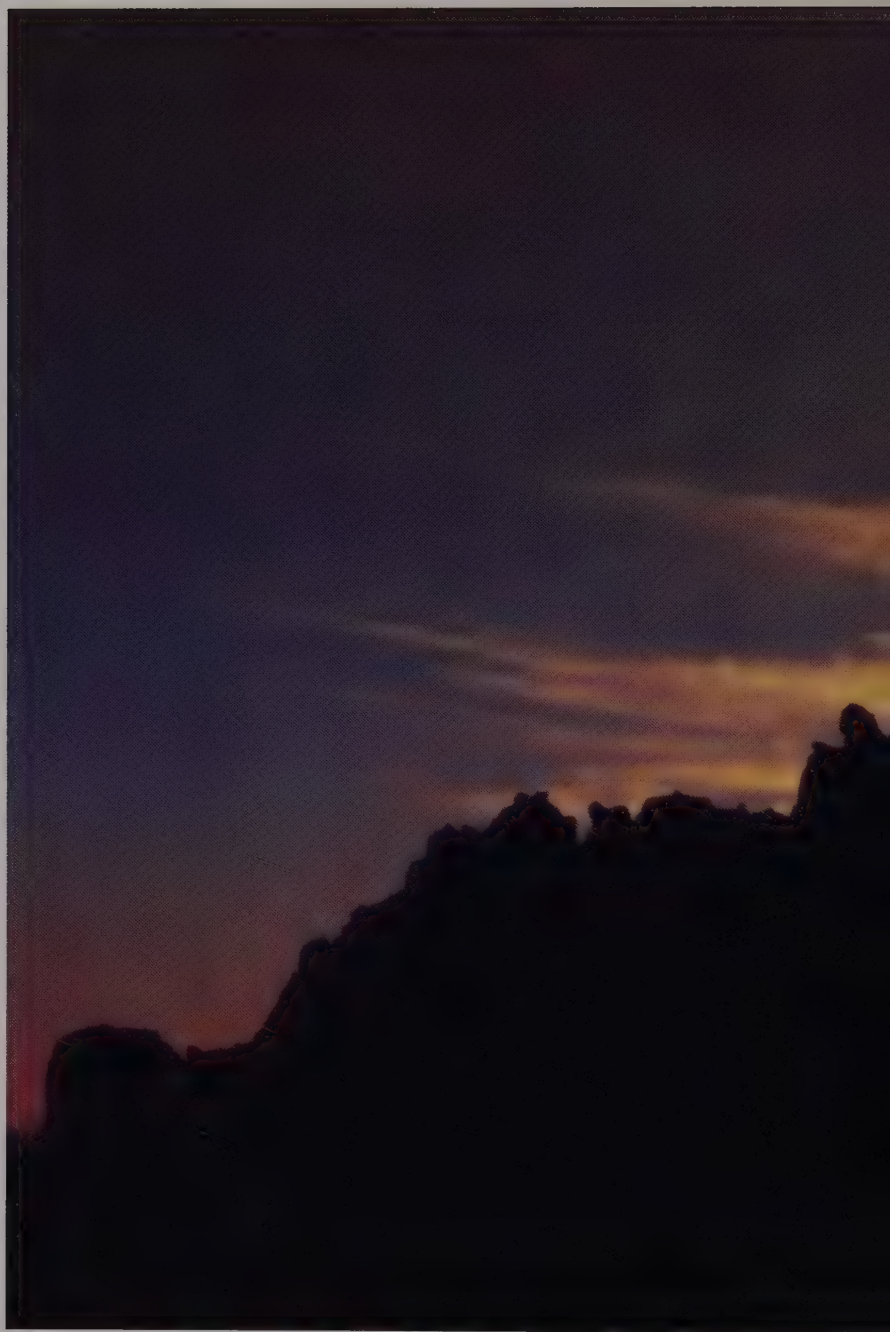
Because the second cave faces west it gets direct sunlight at the end of the day.<sup>\*3</sup> Over the centuries, the crimson pigment has faded to a pale red. Yet the drawings on this wall are more dense even though a large part of the rock has been eroded.

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<sup>\*1</sup> P. Clayton, *The western side of Gilf Kebir*, LXXXI, 1933.

<sup>\*2</sup> Based on recent discoveries by F. Wendorf...in the Libyan Desert and by G. Bailloud and P. Huard in...eastern Chad, the Neolithic sites in Gilf Kebir probably date between 6000 and 4000 B.C. (M. Hoffman, 1979).

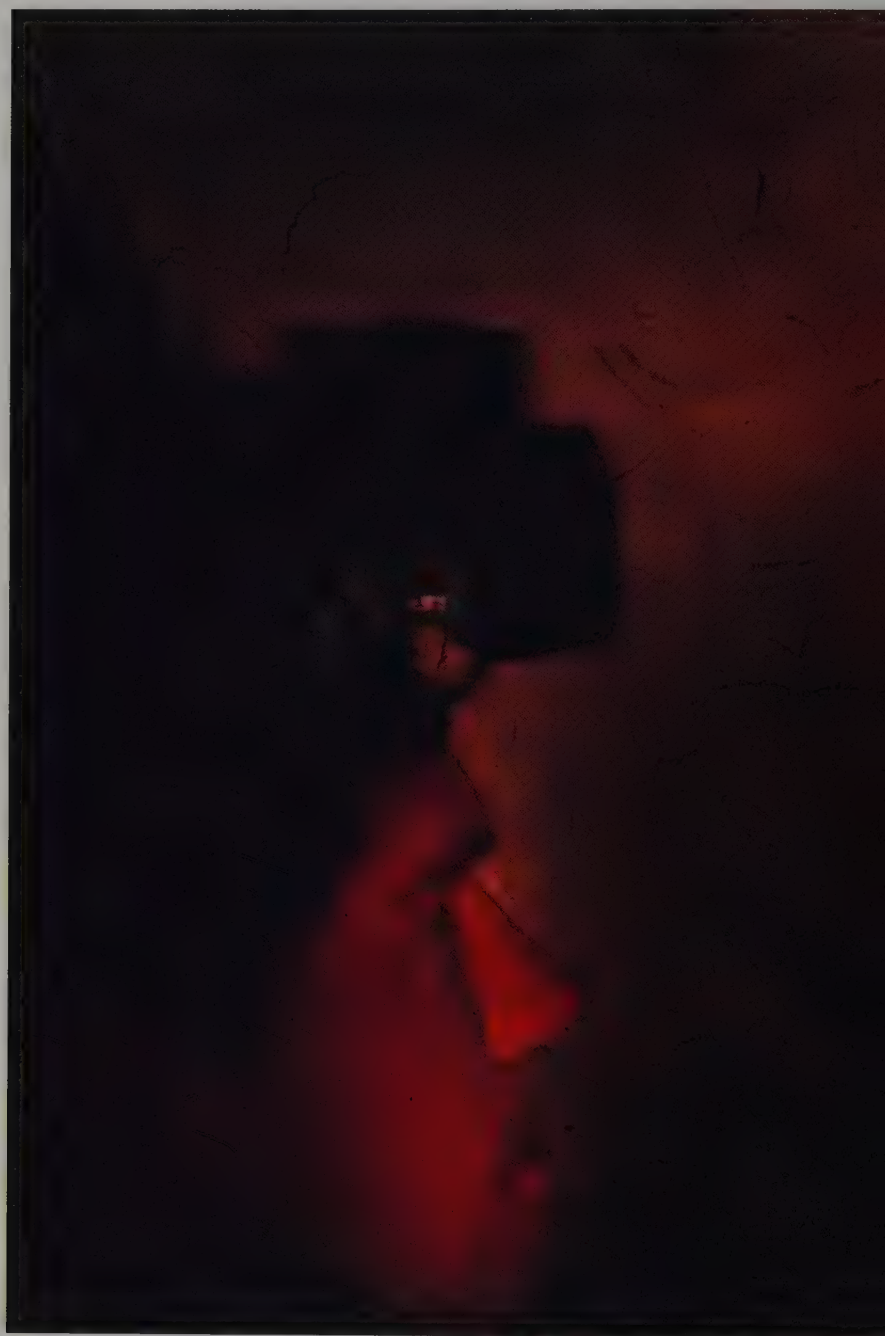
<sup>\*3</sup> Remarkably, the majority of the rock drawings in Gilf Kebir and Uweinat face north. This position provides protection from direct sunlight.







*The sun slides down behind the walls of Soura, the only motion in a landscape of stillness.*





The paintings show pastoral scenes. There are cows painted in different sizes, a running gazelle and a herder with cattle. There is also violence: eight men pointing their bows and arrows at each other while tall slim -- most likely -- women are painted standing nearby. Other than the drawings, there was no other evidence of previous human habitation in the caves. The bottom of the first cave lay beneath a sand drift, while the bare floor of the second cave -- which lies at the same level of the water course -- has, no doubt, been flushed ages ago. The few artifacts we found lay strewn about the surrounding plain. The bed of Wadi Soura is bare, probably swept by a turbulent water stream violence that carried all the fallen rocks to within a few kilometers of the valley's mouth.

Along the foot of the Gilf's western cliffs, we drove southwards. Wherever we stopped, large quantities of lithic artifacts were scattered about. They covered the barren surface of this limitless stretch of desert with such density that I began to picture hundreds of thousands of people settling in this waste. The impression I got was that that ephemeral lakes could not have been the only source of water here because they could not have supported such a great number of people. I searched the horizon for possible evidence of an ancient river, but found nothing.

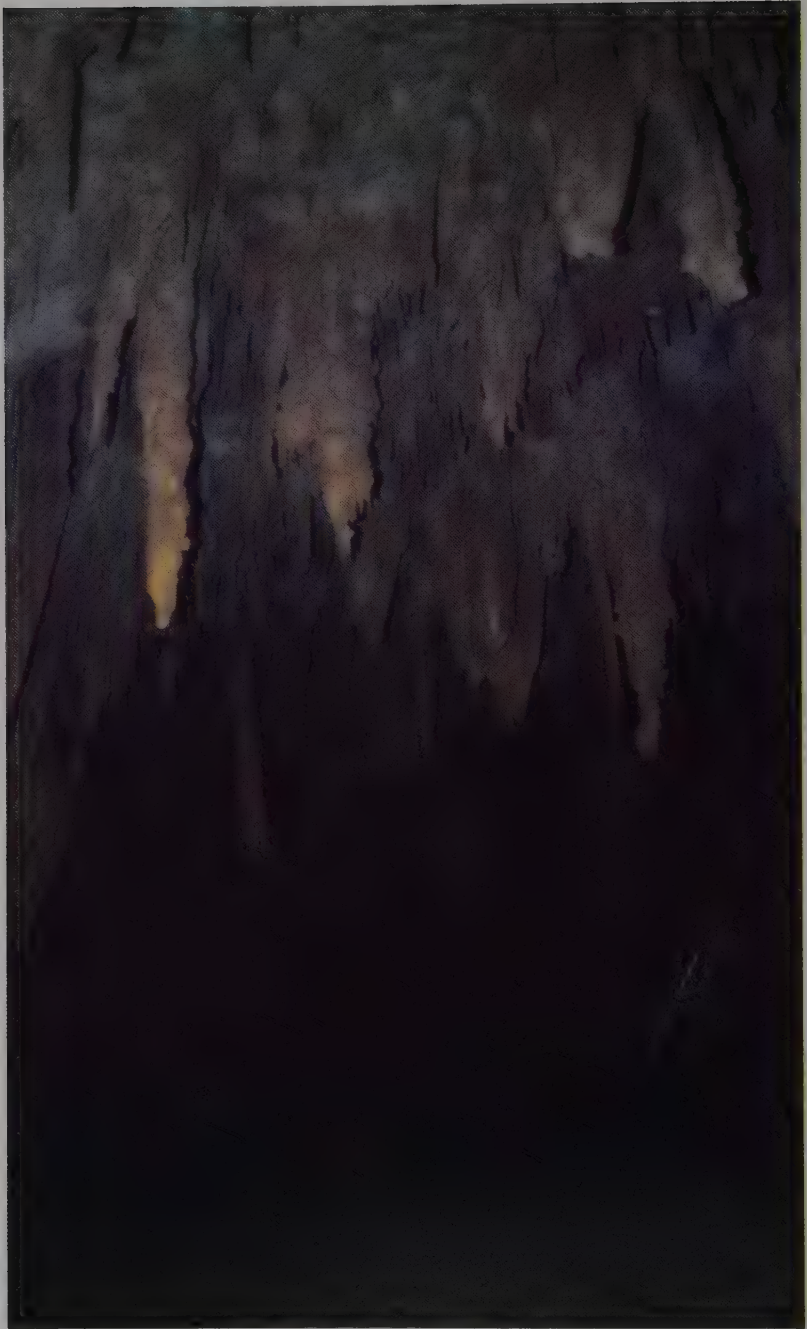
Bakht, Ard al-Akhdar and Wadi Soura are three relatively modest sites in this vast desert. In the perspective of all of prehistory, the possible contribution by Gilf Kebir to the emergence and understanding of humankind and the enrichment of human life could be impressive.

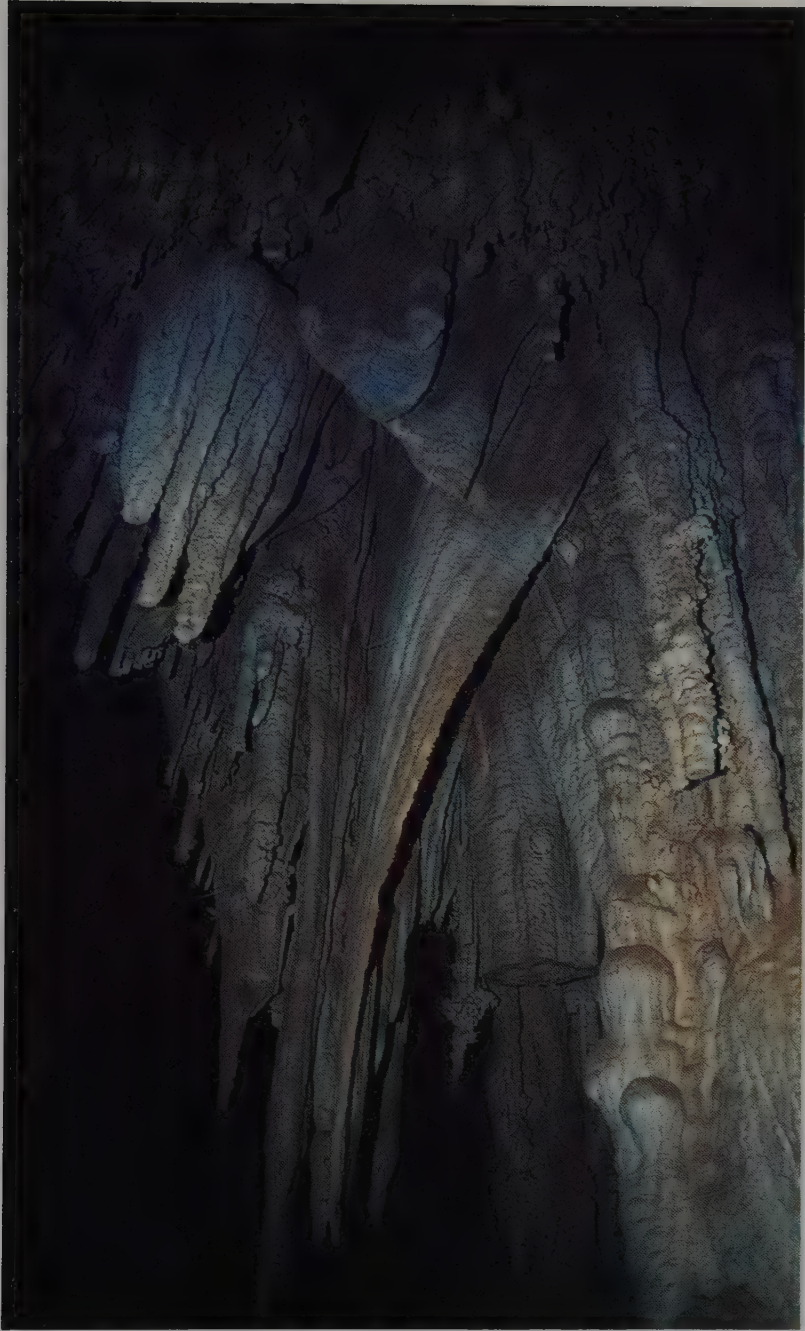






*Rock drawings replace to some degree written records. Read carefully, they may tell us about dress, customs, weapons, hunting, wildlife and domestic animals. Sometimes we can even draw moot conclusions as to religious beliefs and social institutions of the authors of such drawings. (H. Winkler)*





*Al-Garra Cave: Discovered by Rohlfs' expedition in 1873.*



Topographic features -- craters, sand dunes and broken country -- between Uweinat (bottom right) and Gilf Kebir Plateau (top left).



# UWEINAT

Djebel al-Uweinat marks the southwest corner of Egypt. As far away as the horizon, the mountain's character differs from the deserts that surround it. Together with the Arkenu heights of Libya and the volcanic summit of Kissu in Sudan, Uweinat forms a highland axis in the core of the Libyan Desert. These three consecutive peaks, composed of some of the oldest rocks in Africa, emerge like islands amid the flat plain, surrounded by nothing but infinity itself.

Until 1923, the existence of this monumental highland was mere hearsay. For centuries, Uweinat was just a mirage, a wishful-thought-oasis that added spice to Saharan tales.

## The Discovery of Uweinat

The oral history of the Sahara's indigenous inhabitants mentioned early attempts to locate an oasis that lay somewhere due southwest of Dakhla.\*<sup>1</sup> But the earliest written record of such trials can be found in Harding King's *Mysteries of the Libyan Desert*.

King recounts a series of journeys he made through the then unexplored tracts southwest of Dakhla. Directed by local hearsay-cum-information of an unknown oasis, the British adventurer searched the desert by camel in 1911.\*<sup>2</sup> His Arab guides took him to the edge of a hilly terrain -- which he later claimed to be the northeastern boundaries of Gilf Kebir -- before they turned back for lack of water. From the farthest point King reached, Uweinat was still 500 km away. Six years later, a British car patrol traveled farther in the same direction. But they still saw no oasis and found no water.

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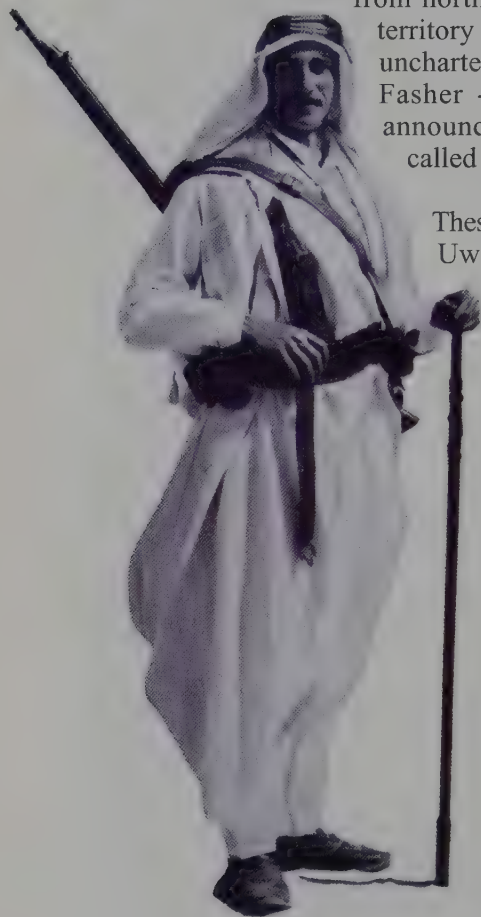
\*<sup>1</sup> H. King, *The Libyan Desert from Natives' Information*, *Geographical Journal*, Vol. XLII, 1913, P. 277.

\*<sup>2</sup> H. King, *Mysteries of the Libyan Desert*, 1925.

In fact, the absence of water in this part of the Sahara was the challenge that brought explorers back to the oases.

It was not before 1923 when Sir Ahmed Hassanein -- a fencing champion, diplomat, and explorer -- made the most remarkable journey ever recorded into the Libyan Desert. Starting off at Sollum on the Mediterranean coast, he plodded 3200 km through Siwa, Jalo and Kufra to al-Fasher in Sudan. His was the first -- and last -- successful crossing of the Libyan Desert

from north to south by camel. Half the territory Hassanein crossed was totally uncharted. When at last he reached al-Fasher -- after seven months -- he announced his discovery of what he called "the lost oases".



*Ahmed Bey Hassanein,  
a man woven into the fabric of the desert's  
visage as tightly as a pattern in a carpet.*

These were the oases of Arkenu and Uweinat where Hassanein found stored rainwater deep within the arid desert. The granite water pools at the foot of Uweinat mountain were so valuable that he named the whole area after them, for Uweinat means "little springs". His discovery opened a new page in the history of desert exploration by breaking the biological barrier against waterlessness in this region. It was the first time in recorded history that this part of the Libyan Desert unveiled its deepest secrets.

When Uweinat became a reality on the map, the permanent water reservoir at the very center of the desert became the target of all explorers. In 1924, Prince Kemal al-Din proved that

Uweinat could be reached by car straight from the Nile. And he used it as a base for further explorations. He mapped the area and measured the altitude of Uweinat and its neighboring mountains. Then followed Ralph Bagnold, the British officer whose name is inscribed on the 'Libyan sands'. He reached Uweinat in November, 1930 and wrote: "Uweinat mountain had by now become in our minds a sort of a home, a base where further supplies of life's necessities awaited us."<sup>\*1</sup>

Although Uweinat emerged from the southern mirage more than seventy five years ago, much like Gilf Kebir and the Sand Sea, little is known of this isolated island.

### **From Gilf Kebir to Uweinat<sup>\*2</sup>**

We camped overnight in Wadi Soura, sheltered by the western cliffs of Gilf Kebir. We headed south the following dawn and approached Uweinat by nightfall.

We continued for half a day along the Gilf's western boundaries. A few kilometers away from the sheer cliffs, our crossing was made easy by the surface terrain: a hard sand sheet marked with occasional exposures of sandstone. Black hills would rise and fade away as we passed, but the dominant feature remained the undulating sheet striped here and there by groups of symmetrical crescent-shaped dunes.

Rising 300 m above us, the Gilf's scarp blocked the east completely. Just at its foot, the terrain is rugged and the surface is carved by water channels that cut through dense clusters of fallen rocks. To the west, a barren desert extends endlessly towards the interior of the North African Sahara. No sign of anything in that direction except the tips of distant dunes floating on a glimmering mirage. And the empty south widened the more we advanced.

Around noon, we reached the southern tip of the Gilf Kebir plateau and stopped to check our supplies. We had been driving in the desert for fourteen days. For the first time since we left, the east was open to us. A mere 700 km away, Dakhla seemed

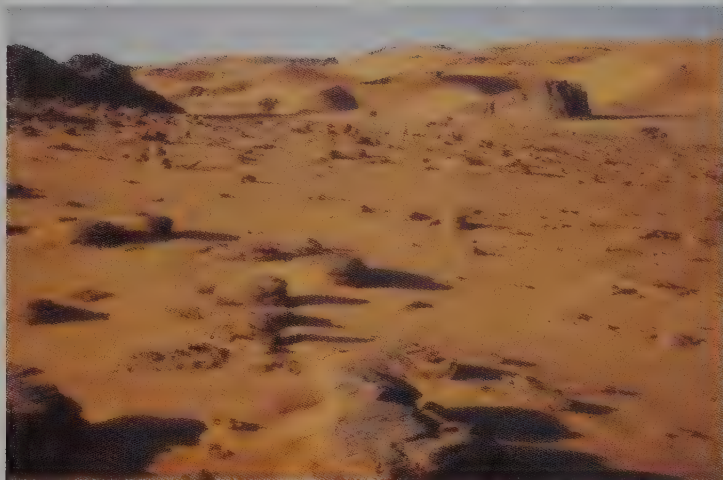
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<sup>\*1</sup> R. Bagnold, *Libyan Sands*, 1941. p.235.

<sup>\*2</sup> February 11, 1997.

not so far anymore. It was like coming back from the other side of the moon. And we were eager to reach Uweinat to complete the region's ecological survey. We had enough food and water, but the fuel resevoir had to be calculated precisely. Better off than Harding King, Uweinat was still at least 140 km away.

Not far from Prince Kemal al-Din's monument -- erected by Almasy in 1933 in memory of the prince's discovery of the plateau -- we sighted four peaks piercing the southern horizon. The two in the center were the volcanic hills called Peter and Paul. Named by Sir Robert Clayton after the cathedrals of St. Paul in London and St. Peter in the Vatican, the two hills stand like beacons mid-way between the Gilf plateau and Uweinat.



*Precambrian exposures at the foot of Uweinat, some of the oldest rocks in Africa.*

Different in shape from the neighboring hills, Peter and Paul form the western limit of the so-called 'Clayton craters'. First sighted by the Almasy-Clayton expedition of 1931-2 this group of extinct volcanos gives the area its uniqueness and geological significance. In the open desert, the peaks can be seen clearly from sixty kilometers away.

We headed for Peter and Paul without a compass. The smooth sand sheet started to rise gently, interrupted in places by stony ridges of Palæozoic sandstone which we avoided easily by short detours.



The dunes to the west disappeared behind a low scarp that ran parallel to our route. The top of the scarp was sharp enough to suggest a dark horizon within reach. It extended as far as Peter and Paul and then withdrew to the west towards the Libyan border.

In the roughly 5.000 sq/km we crossed, we saw no sign of life. Apart from the few tracks of Barbary sheep, there was not even a shrub to suggest an occasional rainfall or to break the monotony of dark hills dotting the vast sandy plain. Rain, the only source of water in this desolate region, is a scarce commodity. In fact, the incident solar radiation here is capable of evaporating 200-times the average amount of rainfall.\*<sup>1</sup> There is not a single chance for a plant to survive.

### A Geologist's Paradise

We shifted our direction to due southeast and soon came upon a series of nearly thirty ring-structured features. From a distance, these 50-meter-high craters looked like medieval castles.

Just as St. Peter's attracts pilgrims who seek wisdom, those craters tempted explorers who sought knowledge. In 1932 and 1938, Bagnold guided two expeditions to this area. On the first occasion, Major K. Sandford, probably the first geologist who examined the craters methodically, stated that the area is indeed "a geologist's paradise".\*<sup>2</sup> His purpose, however, was to determine how the geographical layout of the terrain could be used by the British military in future desert warfare.\*<sup>3</sup>

During his second expedition, Bagnold took another believer to paradise. This time geologist R. F. Peel surveyed the area and extended its limits by discovering another group of craters.

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\*<sup>1</sup> D. Henning & H. Flohn, *Climate Aridity Index Map: U.N. Conf. on desertification, UNEP, 1977.*

\*<sup>2</sup> K. S. Sandford, *Discussions on Meeting of the Royal Geo. Society, London, 1933.*

\*<sup>3</sup> K. Sandford, *Libyan Frontiers, Geo. Jour., Vol. XCVI, 1940 p. 377.*

*Before World War II, both British and Italian patrols surveyed Uweinat and its surroundings. They knew that war in the desert is fettered to geology. Space, topography, surface conditions and water imposed limitations that made large-scale operations almost impossible then. Thus, Uweinat became a place to be controlled. Its broad valleys lead far into its interior, with steep and jagged slopes riddled in some places with natural caverns. Here, armies could conceal supplies and vehicles. And as water was always available Uweinat became a valuable possession.*

He later prepared the first detailed map of their distribution.\*<sup>1</sup> The craters stretch across the territory between Gilf Kebir and Kissu mountain in Sudan. The northern group forms a 'U'-shaped curve to the east of Peter and Paul, while to the south, they extend in a straight line beyond the Sudanese border.

From heaven came revelations of the area in the form of landsat images taken by NASA's Gemini, Skylab and Apollo-Soyuz space-crafts. When the images of the craters were first examined, it was suggested that these forms may be impact craters like those photographed on Mars and the Moon. Based on these images, geologist Farouk el-Baz, examined this area in 1978 and reported on a specific hill east of Peter and Paul. His paper details a morphological similarity between a specific feature on the hill's slope and those photographed on the moon.\*<sup>2</sup>

Despite the fact that volcanic activity in the region dates back to the Palaeozoic era\*<sup>3</sup> (more than 230 million years ago), recent dating of the rock forms in the southern Egyptian Sahara "shows active volcanic eruptions in the span of time extending between 80 to 33 million years ago.\*<sup>4</sup>

The craters look like the bowl-shaped mouth of a volcano, like those pock-marked orifices dotting the surface of the moon. Surrounded by circular walls called "rims", their interior diameter ranges between 500 and 1000 m.

To take a closer look at these outstanding features, we approached the first crater that came our way. We walked in through a sand-choked crack in the outer rim and found ourselves inside what looked like a massive football stadium. With steep black graduated walls, the crater measured some 700 m across. Shapeless rock mounds dotted the interior.

To my surprise, I found two stone-circles on top of a mound in the center of the crater. Since there was no sign of recent life nearer than Uweinat (some 60 km southward), we guessed that these circles are man made and may date back to some prehistoric period when rainwater collected inside the rim, supporting some form of life.

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\*<sup>1</sup> F. El-Baz & B. Issawi, *Crater Forms in the Uweinat Region, Annals of G.S.E, Vol. XI, 1981 P. 84.*

\*<sup>2</sup> F. El-Baz, *Boulder Tracks on Hillslopes in Southwest Egypt and Similar Features on the Moon, Annals of the Geological Survey of Egypt, Vol. XI, 1981.*

\*<sup>3</sup> Gamal Hemdan, *Shakhsiat Misr..P. 45*

\*<sup>4</sup> B. Issawi, *A Report on the Combined Prehistoric Expedition, After Meneisy & Kreuzer, 1974.*



*From a distance, the 50-meter-high craters looked like medieval castles.  
From an orbital perspective these ring structures look like craters on Mars.*

From the top of a second crater, I could see the shadows of Uweinat which rises 1907m and the 1410m silhouette of Arkenu's heights. Farther south, the third landmark of this lost world, the nebulous Kissu, stands 1726m tall and loomed beyond the Sudanese border. The three mountains rise higher than anything we ever saw in the Egyptian Sahara. In fact these are the only real mountains in the whole Libyan Desert.



*Stone-circle inside a crater not far from Peter & Paul (see arrow),  
the volcanic hills between the Gilf Kebir plateau and Uweinat.*

## **Approaching Uweinat**

The topography changed dramatically as we approached the mountain. The craters vanished as we descended into a depression behind which the desert surface disappeared. The sand became softer and we began zigzagging through hillocks of basalt. At times, the flat top of Uweinat itself would disappear beyond walls of dark igneous rocks. These 10 m high dikes stood as parallel barriers above a ground choked with boulders, like the vestiges of some ancient fortifications.

Once more we slipped down into a wind-swept basin whose surface was thinly covered by a pristine sand sheet. Stretching along the foot of the Uweinat heights, this shallow basin looked like the bed of an ancient lake where sufficient rainfall may have collected in the distant past. At dusk, we saw the first tree in 400 km.

After driving 240 km from Wadi Soura, we spent our first night at the entrance of Karkur Talh, the Acacia Gorge. At the furthest Egyptian spot from the Nile -- said to be the most arid place on Earth -- we camped not far from several living perennials and ample evidence of wildlife activity.



*Northeast of Uweinat this island of Nubian sandstone juts through the sand and protects a solitary acacia tree from the creeping dunes.*



## Uweinat Mountain

The 1400 sq/km elevated surface of Uweinat juts into three countries. The western half of this circular mountain stands in Libya, the eastern third in Sudan and the northeastern flanks slope into Egypt.

Our journey to Uweinat had imposed on us research in history, geology, topography and basic logistics. We went to the mountain with three objectives in mind. Our first goal was to identify its natural resources; the second to assess the environmental value of the area; and our third goal was to suggest a system of management for the region as a Protected Area.\*

The Egyptian part of Uweinat is waterless. The water pool used by the early expeditions lies in Sudan which was partitioned from Egypt in 1956. The nearest Egyptian water supply, at Bir Mesaha, necessitates a 300 km crossing of hostile desert. The water at Ain al-Brins in Sudan was a mere 30 km south, but even harder to reach than the water at Bir Mesaha. Political conflicts have turned sister states into fighting brothers.

The remoteness and aridity of Karkur Talh prevents any sort of regular visitation. It was clear that no one had approached the valley's entrance for a long time. The wind had successfully erased all traces of previous visits, and it seemed as if no one had been here before us. We received this sense of false satisfaction with grace.

## Karkur Talh

At the mountain's base, four acacias grace the entrance of Karkur Talh, the main gorge of Uweinat. Usually, 'karkur' means a gorge or a small wadi. For an unknown reason, this place was not called a 'wadi' like the rest of the Saharan valleys. Its name comes from '*karr*' meaning 'to return repeatedly'. Talh designates a species of acacia (*Acacia raddiana*) that is known in other Saharan countries by the name '*Sayyal*'. So 'Karkur Talh' is a gorge with acacias, a place where herders return to graze their livestock after the occasional rain.

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\* The team members consisted of Col. A. Mestekawi, Prof. L. Boulos, Dr. H. Nayel, Dr. M. Hemdan, Zarzora Expedition's crew and myself.

Inside, a mass of wind-blasted sandstone splits the valley into two passageways. The western branch contains a considerable amount of greenery. The eastern branch, which we followed, forms the main bed of Karkur Talh that penetrates south and stretches across the border into Sudan.

The valley's floor is flat and partially covered with a thick layer of drift-sand. Scattered acacias span the length of a dry water course wherein buried seeds await the next sudden rain. The low eastern walls of the valley were completely submerged beneath a mass of shapless dunes, while the vertical western walls were heavily eroded and sand-free.

A few kilometers from the entrance we ran across an international boundary post bearing the number 56. This is one of an endless line of posts set along the imaginary latitude of 22° N to divide the once united Anglo-Egyptian Sudan. Thereabouts, plenty of lithic artifacts were excavated by our expedition's archaeologists who dated the site to the Neolithic period.\*<sup>1</sup>

Further south, the valley curves westward where the plant cover becomes more dense. There were hundreds of thorny trees. The Talh and the Salam (*Acacia ehrenbergiana*) were the most common, rising high enough to provide shade for the countless small grass and herbs. The dominant species here was the perennial grass (*Panicum turgidum*) which is known to endure extremely hostile desert conditions.

Rain in Uweinat is totally erratic and unpredictable. Because the region is no longer inhabited, there are no records at all. The only clue to rain is the state of the plants in valleys with sizable water catchment areas, like Karkur Talh.

In 1934, Kennedy Shaw, a member of Bagnold's pre-war exploration party, reported a shower over Uweinat and Gilf Kebir. The following expeditions witnessed no rain. Some have estimated that it rains every seven to ten years,\*<sup>2</sup> while others think that rain may cease for up to 20 years. Mestekawi, who visited Uweinat twenty years earlier, said that although there was no evidence of rain in 1977 the flora were healthier than today.

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\*<sup>1</sup> Barakat & Hemdan, *Report on the archaeology of Gilf Kebir & Uweinat*, EEAA, 1997.

\*<sup>2</sup> Zahran, *Vegetation of Egypt*, p.111.

Prof. Boulos, a botanist who surveyed the flora of Uweinat as a member of NASA's 1978 expedition, agreed with Mestekawi that the plants were in much better condition during his previous visit.

Much like nomads, modern observers pass on information regarding the status of water, pasture and game in the region they just came from. While nomads seek such information to survive, we sought this knowledge to predict the vegetation's imminent death.

Boulos reported pessimistically on our visit. "The area was remarkably dry: apparently rainless for about a decade. Particular striking is the high mortality among the...trees. The few living trees are secreting huge amounts of gum coating the branches, leaves and fruits; practically every part of the tree seemed to be covered by gum. This process is probably useful to prolong the vitality of the tree against the severe drought to which they are subjected... Unless the area will soon receive a substantial amount of rain, the entire habitat would collapse."\*<sup>1</sup>

A few months later, the Gilf and Uweinat received rain in May and October 1997. These were the only rainstorms we ever witnessed in a decade of desert travel.

When the valley narrowed to a gully, we found a stone arrangement suggesting a former encampment. Not far, we spotted a couple of camel carcasses and elsewhere a collection of camel saddles, a leather whip, a wooden stick and a water-skin. Although they seemed to have been left a long time ago they were surprisingly well-preserved. We associated these finds either with the Tebu or the Sudanese tribesmen of the Guraan, Zaghawa, and Bedayat who revisited Uweinat in search of more abundant grazing.

The Tebu, a rugged people, are probably the descendants of the earliest inhabitants of the Libyan Desert. Mentioned by Herodotus and Ptolemy by the name Garaments, they lived somewhere between Tripolitana and the Fezzan. These desert nomads roam the territory between the Tibesti mountains\*<sup>2</sup>

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\*<sup>1</sup> L. Boulos, *Report on the Flora of Gilf El-Kebir & Uweinat*, EEAA, 1997, pp. 3-4.

\*<sup>2</sup> *The Tibesti in northern Chad are by far the highest summits in the entire Sahara. The mountain range was explored by Col. Tilho in 1914.*



*"The adaptation of living organisms to arid conditions has taken several forms and is not limited to a few small isolated species. In reality, one of the most fascinating aspects of the study of life in the desert is the degree of parallelism or evolutionary*





*convergence achieved, pulling along numerous common characteristics from groups not directly related." (John L. Cloudsley - Thompson and M. J. Chadwick)*

and the Libyan oasis of Kufra. In the past, they raided the surrounding oases by force of circumstances. Over the centuries, Karkur Talh, much like Wadi Abdel Malik in Gilf Kebir, became their refuge during prolonged drought. They settled here to benefit from the perennial acacias that sustain their livestock when no other pasture was available in the surrounding plain.

We first learned of such a settlement from Hassanein Bey who reported on a clan, the Guraans, of some 150 persons herding goats and sheep here. Their leader Herri, the King of Uweinat, led Hassanein to the water pools and taught him more about the region. They apparently abandoned Uweinat in the early 1930s because Almasy's 1933 expedition found no one here.

Although they knew of all the grazing fields in the desert, these people were perhaps forced to evacuate their homeland as both economic and ecological factors turned against them. Nowadays, the Tebu inhabit permanently green areas like Waw al-Kebir, Balzaba and Waw al-Namous.\*<sup>1</sup> For an unknown reason though, some of them occasionally return to the remote desert. It is possible that their visits are either a way of reviving their culture or maintaining a geographical possession.\*<sup>2</sup>

### **The Rock Drawings of Uweinat**

Water and nomads were not the only secrets Hassanein returned with. He brought back an ancient archaeological mystery. The valley was inhabited long before the Guraans and the Tebu by people of time immemorial. Their drawings tell the story.

"They were in the valley at the part where it drew in... We found them on the rock at the ground level... There was nothing beyond the drawings of animals, no inscriptions. It seemed to me as though they were drawn by somebody who was trying to compose a scene... There were lions, giraffes and ostriches, all kinds of gazelles, and perhaps cows, though many of these figures were effaced by time... I did not find any traditions about the origin of these interesting rock-markings, but I was struck by two things: There are no giraffes in this part of the

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\*<sup>1</sup> M.S. al-Taib, *The Arabian Tribes*, p. 397.

\*<sup>2</sup> Nomads in general are declining in number. Estimates of the total number of the world's pastoral nomads in 1980 ranged from 5 to 13 million persons, or 0.8 to 2.1 percent of the total population of the world's arid land. This represents a decline from an estimated 20 million nomads in 1960. (J. Hobbs, 1989; After R. L. Heathcote, *The Arid Lands: Their Use and Abuse*, 1983)

country now; nor do they live in any similar desert country anywhere."\*<sup>1</sup>

These became the first prehistoric rock drawings ever found in this part of the Sahara. Hassanein concluded that they dated back to a climatic age considerably moister than ours. How ancient they were he could not have guessed.

On his second journey to Uweinat, Prince Kemal al-Din tempted the French professor, H. Breuil, a human palæontologist and expert in ancient rock drawings, to come with him. Together they investigated Karkur Talh and published the first scholarly accounts on the rock engravings and paintings.\*<sup>2</sup>

As usual, Almasy followed in 1933-35. He guided Leo Frobenius, a self-taught archaeologist, who collected a considerable amount of artifacts and sketched drawings that could have given others a chance to analyse this vague prehistoric presence. Unfortunately, all the finds and notes were lost during the World War II bombing of Germany.\*<sup>3</sup>

All that remain of the early studies are the descriptions by Kemal al-Din and his companions and the results of Bagnold's 1938 expedition which consist of the unpublished accounts of archaeologists Oliver Myers and Hans Winkler. For lack of more thorough information, these accounts have become the basis for all the archaeological studies on the Gifl and Uweinat.

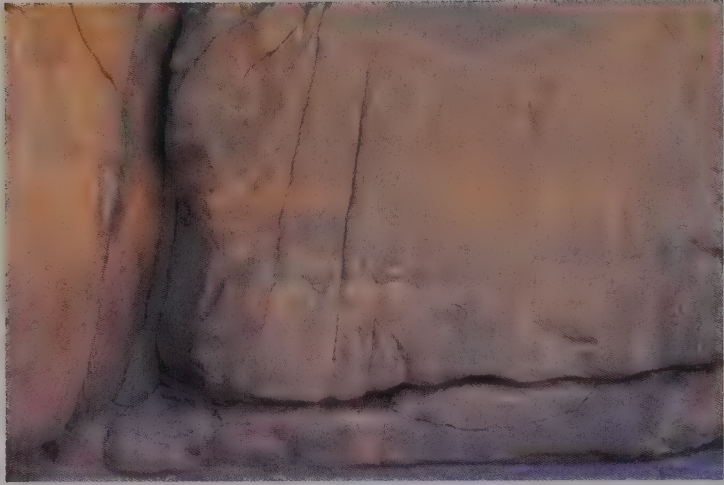


\*<sup>1</sup> A. Hassanein. *The Lost Oases*, 1925, p. 228-9.

\*<sup>2</sup> S.A.S. Le Prince Kemal al-Din Hussein, *Les gravures rupestres de Djebel Ouenat*.

\*<sup>3</sup> Michael Hofmann, *Egypt before the Pharaohs*, p. 226.

On the southern wall of the gully, we found the rock drawings protected from direct sunlight and exactly as described by the early expeditions:



*"At a casual glance they were very ordinary crude chippings about six inches in size, outlining men and animals, carelessly scrawled over the rock walls, mostly on the shady side of the valley. They were very sharp and hardly weathered; in any other country one would say they were a few years old at most. But when giraffes appeared, and horned cattle or antelope, and men with bows and shields, and later when on the roof of a cave red-and-white paintings were found of...figures characteristic of the Bush-men paintings of south Africa, it dawned on one that these pictures were very strange indeed -- dating from a long-past climatic age and a former distribution of mankind."\**

Although the people who made the drawings have long disappeared, prehistory is still alive in Karkur Talh. The innumerable acacias, grasses, wild sheep and gazelles suggest a faint savanna-type ecosystem, slightly resembling the desert of former millennia. At Karkur Talh the Saharan landscape of prehistory has risen from its grave.

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\* R. Bagnold, *Libyan Sands*, pp. 171-72.



About 10.000 years ago, a period corresponding to the last Ice Age in Europe, Uweinat, like most of the now arid Sahara, enjoyed a climate moist enough to host animals, plants and people. These long vanished people, as their drawings tell, brought domesticated animals with them, probably from the surrounding regions. Some of the drawings suggest that they practiced limited agriculture, knew weapons and sheilds and fought with others -- probably to keep possession of their grazing land.

There were many drawings of camels. Yet as far as I know, Hassanein built his theory of prehistoric origin on the absence of camels.



*"...There are no camels among the carvings on the rocks, and one cannot penetrate this oasis now except with camels... Did the men who made these pictures know the giraffe and not the camel? I reflected that the camel came to Africa from Asia some five hundred years B.C."\**

Could it be that the Guraan engraved their own pictures after Hassanein left? Before his arrival, they had thought that the pictures were made by Jinn. They never approached them. But having witnessed the interest Hassanein --and probably Kemal al-Din -- showed in the drawings, they may have thought to document their own culture before abandoning the valley.

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\* Ahmed Hassanein, *The Lost Oases*, 1925.

With the help of our cook and driver, Ghardoun, I spent a whole afternoon locating and photographing the drawings. Although they were mostly concentrated in one place, we found camel drawings in almost every gully. Returning to base camp, we found no one. My companions were still exploring the wildlife and plants. Their voices echoed through the dusky silence. In the valley, sound carries for long distances like seeds on the wind. But it is difficult to guess where it comes from. That is why it is rare to see the animals that inhabit such a valley. Long before a car arrives, they hide themselves among the rocks.

One morning, out of nowhere we heard the sound of a car. A military patrol of one officer and five soldiers armed with machine guns came speeding towards the camp. Mestekawi shouted, "They are ours," meaning they were Egyptians. In the desert, particularly in places near country borders, any person is a threat until he proves otherwise.

We invited Major Anwar and his soldiers for breakfast. Over coffee, we gathered around him. Everyone had a question. Anwar had been stationed in Uweinat since 1996. His is the only patrol in this isolated zone. Ten men defend 120.000 sq/km of desert.

Major Anwar visited us every morning during our three-day stay in Uweinat. Like Herri, the King of Uweinat who supplied Hassanein with milk and food, Major Anwar generously lent us extra gas and two containers of water, enough to allow us to feel safe while investigating the valleys of eastern Gilf Kebir on our way back to Dakhla. Needs change in Uweinat. In 1923, Hassanein provided medicine for the Guraan family. In return for Anwar's generosity, our mechanic checked on his jeep.

The chance encounter was refreshing. The soldiers and our crew took advantage of this unusual meeting, exchanging tall tales. Our crew spoke of our adventures in the Sand Sea and Gilf Kebir, adding extra spice to their account. In return, the patrol soldiers spoke in detail of their successful exploits with traffickers. Both parties exaggerated, but it was entertaining to listen.

Before the patrol was stationed here, traffickers cavalierly crossed the open desert between the Gilf and Uweinat. They usually smuggled food and electronics into Sudan; on their way back they carried a human cargo of Sudanese refugees into Libya. Major Anwar had arrested two convoys. The news spread as quickly as ripples in water. In the neighboring deserts of Libya, Chad and Sudan people learned that, now in Uweinat, an Egyptian patrol is present.



*La patrie n'est qu'un campement dans le désert.*

*(Tibetan maxim: In the desert, your home is your camp.) Karkur Talh, Oct. 1997.*

"No one comes to this mountain anymore" Anwar said. He had not seen a single soul for the past seven months. The soldiers told us about another valley a few kilometers west. They called it Wadi Hanzal, and described it as a 4 km deep gorge with steep walls, many plants and wild sheep.

When I asked if they knew of places where the sheep drink, Major Anwar said that he saw their 25-km-trails going back and forth between Karkur Talh and the water at Ain al-Brins, in Sudan. Although he knew Karkur Talh, he could not estimate the number of Barbary sheep in the region, nor could he help me find an answer to why this animal does not migrate to the more hospitable environments nearby.

Photo courtesy Hungarian Geographical Museum.



*A 1933 sketch of prehistoric drawings at Uweinat by Almasy.*



*Beleived to be the work of the 'Jinn'. These were the first prehistoric drawings ever found in the Egyptian part of the Sahara.*



Why does such an animal endure rather than avoid drought? Is it nature's wisdom that this species is to become extinct. Is it time for the beast to vanish from this part of the Sahara like the giraffe, elephant and rhinoceros? Why is it the only mammal that still lives here since prehistory?

### On Top of Uweinat

Late one afternoon, I climbed the surrounding hills towards the main chunk of the mountain. A few meters up and the valley disappeared. I found myself zigzagging upwards through a labyrinthine network of narrow canyons through which water had once flooded Karkur Talh. One dry waterfall followed another. The terrain rose rapidly choked with drift sand and granite boulders. Occasionally, I came upon a surviving *Salam* tree squeezing itself within a narrow dry corridor. Barbary sheep tracks marked the sand. Possessed by the thought that there might be a water pool above to support the sheep I continued climbing.

The higher I climbed the more difficult the going. I was forced to change direction many times. Surfaces gave way and high ridges made it impossible to approach the upper levels of the mountain from this side. In fear of losing my tracks, I erected stone pyramids at critical junctures -- another Ariadne's thread in the desert. Some 300 m above Karkur Talh, I reached a vast platform of dark rock. The main body of the mountain was still several kilometers away. Somewhere above the boundaries of three nations intersect.

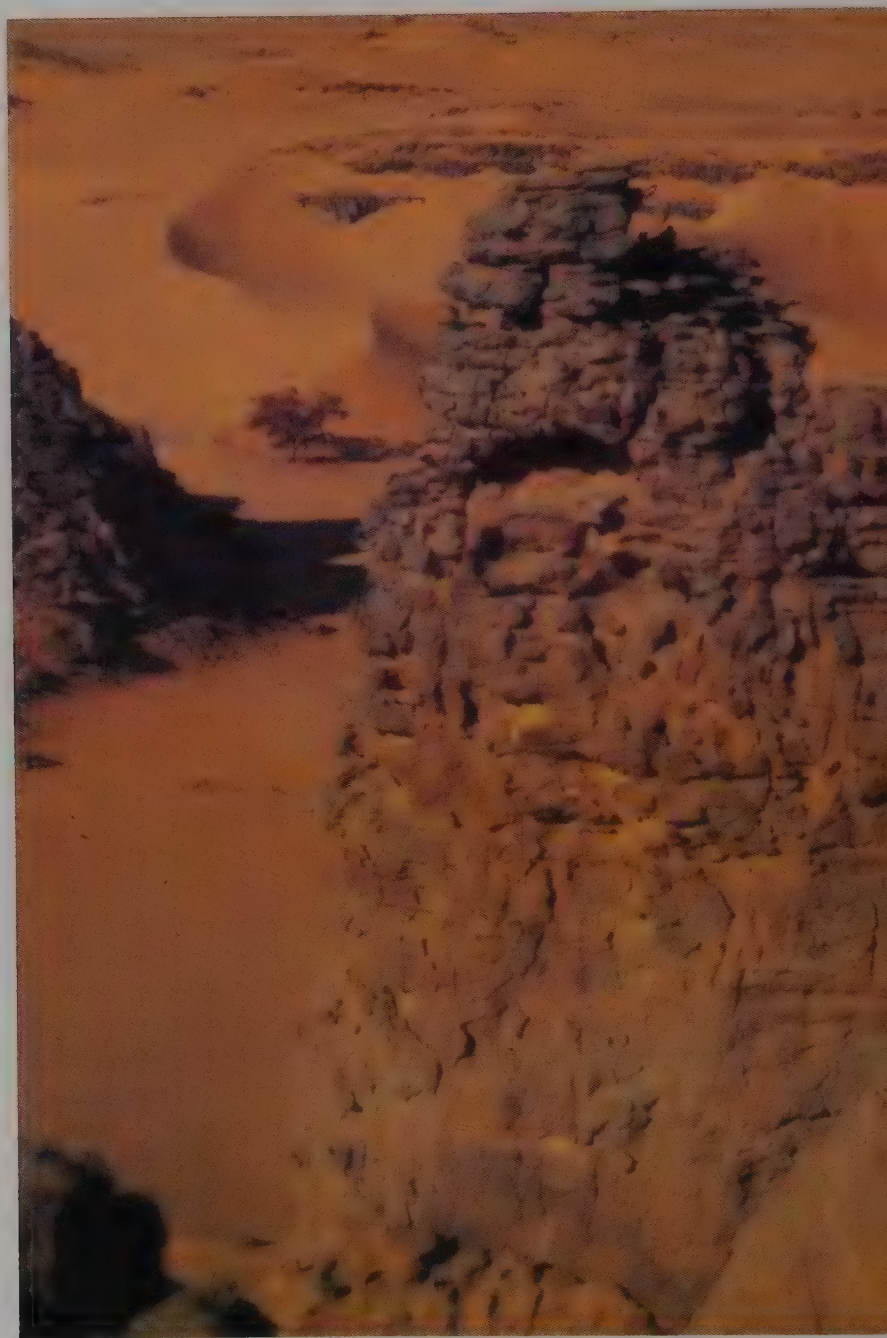
From the highest point I could reach, I looked down at a desert that stretched infinitely towards the north, east and south. The sun slid behind the mountain. As the shadows lengthened, my panoramic view spanned from Kissu in the south to Peter and Paul in the north, an arch of at least 100 km: a lifeless plain with solid hills and hollow craters. In this whole country, the hidden gardens below me are the region's only buffer against absolute death. I realized how tiny Karkur Talh is in this desert. A dying spot in a dead world.



*An Acacia raddiana needs a long time to grow. Unlike other plant species that just spring up, this tree might only become mature after 50 years. It might have lived here a thousand years. In this theatre of aridity the drama has come to an end; a silent dune mounts the stage to bury a life struggling to survive and a shadow softly descends, like the curtain after the finale.*













# **THE LIVING DESERT**





# GLIMPSES INTO THE QATTARA DEPRESSION

Geographically speaking, depressions are the most characteristic, yet peculiar, features of the barren land west of the Nile. Of all, the largest is Qattara, a 20,000 sq/km scooped-out hollow with its lowest point at 134 m below sea-level. As large as the peninsula of Wales, Qattara is by far the greatest depression in the entire Sahara Desert and probably the largest of its kind in the world.

Centered in the northern latitudes of Egypt, the area's first mention came as early as Alexander the Great's visit to Siwa 2,330 years ago. Although history kept a tiny reminder of the Macedonian's march through Qattara, as he returned to the Nile, nothing else is known of his expedition here.

Indeed, Qattara's ancient history remains a closed book even though a series of Neolithic sites dots both the depression itself and the desert separating it from the Mediterranean. While its secrets remain unwritten to people like us, they have nevertheless been inscribed in the oral history of caravan guides. Bedouin who guided the Sahara-dwellers to Mecca and trade caravans to the Nile long knew their way through the territory they named the 'Valley of Death.'

The geographical position of Egypt, in relation to the rest of the world, imposed its destiny on the country's frontiers. No century has passed without witnessing a foreign military campaign attempting to invade Egypt through one of its deserts. The Hyksos, Persians, Mongols and Arabs came through the Sinai and the Eastern Desert; the ancient Libyans, the Sennusis, Berbers and Fatimids came from the Western Desert; and Abyssinians and African desert-dwellers raided the oases regularly from the south.

This century's history has followed the same pattern. When World War I ended, Egypt was left under British control. In neighboring Libya, the Italians held on to and tightened their grip over their only African possession. Britain remained comfortable in Egypt until Italy's acquisitions in the Sahara extended to an alarming degree during the 1920s. The British observed the Italians' territorial greed and prepared for an invasion from the Western Desert. The name 'Qattara' was heard for the first time during those days.

The depression became important as a natural barrier against Italian ambitions to conquer Egypt. Because almost nothing was known of this vast coastal wasteland, obtaining accurate topographic maps of future battlefields became a necessity. The British commissioned the Survey of Egypt to map the northern part of the Western Desert. A stretch of some 500 km between Alexandria and Sollum, bounded in the south, Bedouin said, by an awesome wadi.



*I can not get over the feeling that our party is the only living one, maybe the first, or maybe the last. Standing at the edge of Ras al-Qattara, I see a prominent wall, stretching endlessly, east and west, like a frontier of some lost world. Cracked cliffs edging a broken land, and far below, an un-bounded dark vastness, desolate, like nothing could be described. It feels as if we are looking down at the surface of another planet.*

With growing audacity, the Italians captured the oasis of Jaghub from Egypt.\* Through a treaty in 1926, the oasis was

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\* K. Sandford, *Libyan Frontiers*, *Geo. Jour.*, Vol. XCVI, 1940, p. 378.

exchanged for minor modifications along the coastal and western frontiers.\*<sup>1</sup> The treaty's negotiations coincided with the intensive surveying-cum-reconnaissance in the northern part of the Western Desert by two surveyors, Walpole and Murray.

George Walpole surveyed the region with the help of Sheikh Soliman of the Awlad Ali tribe.\*<sup>2</sup> The surveyor's Ford drew the first pair of parallel lines on the dark surface of the depression, hailing the beginning of our modern knowledge of this lost world. By the end of 1931, the depression's extent was defined and the map of Qattara was printed in secret. In his book *Dare Me to the Desert*, Murray described Qattara that was named after a water-spring the Bedouin called Ain al-Qattara:

*"...There extends a wonderful ham-shaped country of nothing at all -- no mountains, not even hills -- no rivers, not even wadis -- no oases, no springs -- just nothing but nothing and plenty of that."\**<sup>3</sup>

The mapping efforts brought the dead valley back to life. But not for long. In the early 1940s, Qattara was mined densely by both the Allies and the Axis. Mines were laid in the passages and along the caravan routes leading into and out of the depression as well as along the border between Egypt and Libya. World War II ended and became a horrible memory, but the mine-fields remain a living death. Since then, Qattara has reclaimed the echo of death in its original name.

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\*<sup>1</sup> In an attempt to solve a series of military, social, economic and religious conflicts, the Egypt-Libyan borders were rearranged adding the plateau and port of Sollum to Egypt's political boundaries while conceding the oasis of Jaghbug to Libya.

\*<sup>2</sup> Maintaining their tribal enthusiasm and Bedouin lifestyle, the Awlad Ali, or sons of Ali, is Egypt's largest Arabian tribe. Three centuries ago, they left their homeland in eastern Libya and arrived at the Egyptian oases, Sinai, and the Nile valley. Their main territory in the Western Desert extends between the Mediterranean in the north and Qattara in the south. "From Najd in central Arabia, the Awlad Ali came to North Africa in the 11th century. Descendants of the Beni Suliem, they arrived here "either with the Islamic conquest or with [their cousins,] the Beni Hilal... They are not the only Bedouin in the northwest [Western Desert] ...but they predominate numerically and in other aspects of status within the region". (Altorki, S. & Cole, D. *Bedouin, Settlers, and Holiday-Makers*, 1998, p. 42.)

\*<sup>3</sup> G. Murray, *Dare Me to the Desert*, p.163.

## JOURNEYS TO QATTARA

Fifty years have passed since the War. The world has slowly opened its eyes to the damage man still causes nature. As international attention began to shift towards conserving the Earth's environmental heritage, there came reports that deep in this desolate depression, a unique ecosystem exist. We checked with Awlad Ali herders, who confirmed some of these accounts.

Unfortunately, reports on Qattara came at scarce intervals, always limited to a certain locality or to a particular science. The natural obstacles in the depression -- soft sand, rough ground, unbroken escarpments and salt marshes -- together with the obscure mine-fields made it almost impossible to explore and investigate the whole depression.

Late in 1996, we were assigned by the Egyptian government to plan a series of surveying expeditions to evaluate Qattara's ecological significance.\*<sup>1</sup> Our second objective was to assess the degree of threat on Qattara's wildlife by possible future development. Some may find it hard to believe that such a desolate and dangerous region could be thought of as a National Park. But our finds during the field expeditions revealed just such a possibility.



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\* The team consisted of Ecologist, Prof. M. Kassas; Botanist, Prof. L. Boulos; Expedition Leader, Col. A. Mestekawi; Project Manager, Dr. M. Pearson; Geologist, Dr. A. Mansour; the Zarzora Expedition crew and myself.



And so we ventured into the depression in November 1996, May 1997 and September 1988 to document Qattara's natural resources.\*<sup>1</sup>

## Features and Ecology

Not far from the Mediterranean Sea, Qattara separates two geographical spheres. It forms the borderline between a semi-dry coastal environment in the north -- the Diffa or Marmarika plateau -- and the hyperarid interior of the Egyptian Sahara further south. Thus it possesses the ecological characteristics of two desert systems.

Geologically, the depression plays a similar role, constituting part of the seam between two major formations of the Earth's crust. Its southern margin belongs to the 60-million-year-old Cretaceous and Eocene limestone plateau that forms the heart of the Egyptian Sahara. The bulk of the depression, however, lies in the sedimentary stratum\*<sup>2</sup> that make up the 20-million-year-old Miocene plateau.\*<sup>3</sup> As the wind erodes this plateau's limestone upper crust, the fragile sediments beneath crumble. And so Qattara continues to grow to the north. Perhaps, in a million years or so, the depression will be connected, for the first time in its geological history, to the Mediterranean.

Geologists have long discussed the mechanisms that molded the giant depression. Although there is no conclusive agreement on the matter, it is likely that Qattara was formed by the agency of different elements. Besides ground deformations and fractures, water and wind erosion played a major role in hollowing out Qattara.\*<sup>4</sup> Some scientists believe that the sand accumulations that cover large portions of the Egyptian Sahara are the result of Qattara's erosion.

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\*<sup>1</sup> The first two expeditions were on behalf of the Egyptian Environmental Affairs Agency (EEAA), while the third was in favor of Environmental Quality International (EQI) to assess the ecotourism's potentials in the Siwa environs. (See map p. 207)

\*<sup>2</sup> Sedimentary stratum means a bed of sedimentary rock formed by natural causes, usually in layers.

\*<sup>3</sup> It is believed that the depression was formed during the Pleistocene and more recent geological periods.

\*<sup>4</sup> G. Knetsch & M. Yallouze, *Remarks on the Origin of the Egy. oasis-depressions*, 1955. / R. Said, *New Lights on the Origin of the Qattara depression*, *Bulletin de La Societe De Geographie D'Egypte*, vol. XXXIII, p. 37.

The depression is distinguished by two major geographical features: the sheer limestone cliffs that bound and encircle Qattara from the north and west and the bog-like salt marshes that cover large areas of its surface. To the south, the depression's floor rises so gently towards the central Egyptian Sahara that its southern edges are almost unrecognizable. It was finally decided that its total ground area would be measured at the zero-level contour, meaning that Qattara is a sunken desert that lies entirely below sea-level.



*In central Qattara, a sunset halo sets a solitary acacia on fire. The abundance of acacia trees in Qattara took us by surprise. In groves, they spread throughout the entire depression from east to west. Atop their thorny branches, we found large, unused nests--probably the home of the Lappet-faced vulture that ruled Qattara's heavens before it became extinct.*

Qattara's ecology benefits from its regional climate and ground structure. So close to the Mediterranean, its habitats absorb both the sea moisture and blown seeds that the prevailing wind carries in from the semi-dry coastal environment in the north. With an underground aquifer just a few meters below the depression's surface, deep-rooted plants are able to obtain their basic water requirements. In general, the depression's conditions permit the establishment, survival and regeneration of a dynamic desert ecosystem not available elsewhere in the Egyptian Sahara.

The surface of the Western Desert is uniform in character. Massive plateaus slope gradually northeastwards, perforated in many places by giant depressions most of which, have been excavated deep enough to penetrate to the artesian water. Within the depressions oases formed and, later on, people lived. Although all oases lie in depressions, not all depressions are oases. While Qattara's soil is largely fertile, this territory remains uninhabited except for a tiny spot where a single clan struggles to survive.

They live on one of the two oases that demarcate the edges of Qattara. Qarat Um al-Sagheir, known to most as Qara, is situated at the foot of the depression's western walls, while 300 km to the east, along Qattara's easternmost tip, lies the uninhabited Moghra oasis, the nearest of all the Egyptian oases to the Nile Delta and the Mediterranean.

### **Land Below the Sea**

Our first mobile camp was some 40 km northeast of Moghra, at the very spot of a former World War II Allied field-hospital. Striking is the memory of such a War in this part of the Sahara. This silent wilderness once hosted one of the most tragic acts in the history of humankind. Thousands of soldiers were brought here to die, soaking this parched land with blood.

The morning sun saw us cautiously descending the gradual slopes towards Qattara's bottom. We were not too far into the desert and could still smell the Mediterranean which was only a hundred kilometers north. The landscape, however, was pure desert. Below us, the depression stretched southwestwards marked with many hills of eroded limestone and lichen-capped sandstone. Beyond the hills a gritty plain opened wide, lined with parallel golden dunes that averted their faces from Qattara and pointed towards the rising south. To the west, a series of cliffs and boulders dropped sharply until their outline was lost in a shimmer of pink.

We found many Neolithic artifacts near our camp. Even fragments of Ostrich eggshells were abundant. If studied

carefully, these shells, along with Qattara's scattered petrified trees and fossil bones could begin to narrate the depression's still undisclosed prehistory.\*<sup>1</sup>

Most of the rocks along our path were capped by lichens which are among the world's oldest living creatures. As a single unit, the lichen is an organism of algæ and fungus living together. The algæ make its own food with the help of sunlight, while the fungus absorbs water rapidly from the dew. They represent one of the desert's unique forms of symbiosis. Because they reach back farther into history than humankind, archaeologists use them to date artifacts and geologists may find them useful in tracking geological phenomena.\*<sup>2</sup>



*A number of Neolithic sites dot Qattara's floor. Since time immemorial, people roamed, and perhaps inhabited, the now inhospitable Qattara. Their primitive stone implements were found in several locations--along with ostrich egg-shell fragments. Despite the fact that ostriches lived in the Western Desert until the 1930s, the bird's history in the Sahara is an ancient one. It is known that their egg-shells were used as 'water carrying vessels' by prehistoric hunters out for game.*

Another peculiarity in this part of Qattara is the profusion of desert snails. By the thousands, they carpet large portions of the depression's boundaries, especially along the northern cliffs where they feed on lichens. Further south and inside the depression, neither snails nor lichens can be found.

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\*<sup>1</sup> Trees that have petrified into stone are scattered in concentrations throughout the depression. This so-called Petrified Forest must have been buried in sand or mud ages ago. The petrifying action occurred when water seeped through the soil into the buried logs. There it filled the empty cells of the decaying wood with mineral matter until the structure became solid stone.

\*<sup>2</sup> Sylvia D. Sharnoff, *Lichens*, National Geographic Magazine, Vol. 191, 1997, p.67.



## Moghra Oasis

Moghra lies 35 m below sea-level in a tiny depression adjacent to Qattara's eastern tip. With its stagnant lake, lush plant growth and palm trees, Moghra looks more like a misplaced swamp than a desert oasis.

As a result of extensive evaporation and poor washing, the strip bordering Moghra lake has, over time, become salt saturated. Yet many plants seem to have adapted well to this saline crust. Palm trees *Phoenix dactylifera*, growing mainly near the fresh water sources in southern Moghra, send their roots down to the water table beneath the saline surface. Other plants such as Turfa *Tamarix nilotica*, Hajna *Phragmites australis*, Ghardaqa *Nitraria retusa*, Agoul Alhagi and Bual *Zygophyllum* cover most of the oasis' floor and cap the surrounding sand mounds. These plants depend mainly on the morning dew that covers their leaves to survive. In many parts of Qattara, there is evidence that moisture is attracted to the highly saline soil. This may be the reason behind the astonishing abundance of plants in the depression.

The same plants that blanket Moghra -- in addition to acacia trees -- are the dominant species throughout Qattara. Acacias *Acacia raddiana* and *A. ehrenbergiana* can be found all over Qattara, though their main concentration is in the depression's extreme northwestern corner at Talh al-Fawakhir.

*Talh al-Fawakhir is the name of a series of neighboring groves that stretches for some 40 km at the foot of Qattara's northwestern cliffs. Al-Fawakhir is a Bedouin clan from Arabia. They came to North Africa as soldiers in the Islamic army that conquered the Sahara and reached Spain. Having settled in Libya, where they were known as the Morabiteen tribe, they mixed with the Berber, learned the routes and worked as caravan guides. They crossed Qattara on their pilgrimage trek to Mecca. One year, as they halted amongst the acacias to rest, one of their virtuous Sheikhs died there. They buried him and revisited the place each year. Their name eventually became synonymous with the acacias of 'Talh al-Fawakhir.*



*The diversity of habitats within Qattara is exceptionally wide, especially when compared with the barren and uniform tracts of neighboring plateaus. Around the water-surface of Lake Moghra --for example-- there are arid cliffs,*



*salt marshes, mud-pans and playa deposits, gravely plains, a broken limestone country, sandstone hills and outcroppings, pebbly slopes, shallow wadis, green acacia trees, lush palm groves, sand sheets and, naturally, sand dunes.*



We found acacias at Naqb Tabaghbagh, at the foot of Minqar Abdel Nabi, in the valleys of central Qattara, and as far east as the terrace that overlooks Moghra. Because their roots burrow deeply, to an underground water level beyond the reach of other plants, these trees are green throughout the year.

To avoid the million mosquitoes of swampy Moghra, we camped at a safe distance from the oasis, near the acacia groves northwest of the lake. The wind died as the sun set and dusk came slowly. Younis collected some roots from the scattered dry plants. He lit a fire to make a center, a focus that structures and diminishes the vastness. One by one we gathered around the flames. We squatted and stared at its core that created a circle of intimacy in the wilderness. In fact, a fire provides not only a sense of warmth but it seems to reduce the open desert to a manageable size.

In the moonlight, we spotted a starving fox circling our camp. Later on, as the Big Dipper turned high in the sky, a bird screeched and a jackal howled at our unwanted presence.

We woke up lost in mist, to a fog bank that hung above until late morning. As the weather cleared, a starling glided above us and a flock of storks showed us the way back to Moghra. Herders and untended camels were everywhere because of the recent rainfall. Out of nowhere they approached our camp. Last winter's coastal rain was not sufficient to support new plant growth near the Mediterranean. Because the Bedouin wouldn't allow their camels to graze on the few struggling plants -- to maintain the distribution of certain species -- the camels were driven by instinct towards the permanent pastures in Qattara. Unlike goat and sheep that must be escorted by shepherds, camels can wander for months and walk hundreds of kilometers before returning to the well they know. On other occasions, we saw camels wandering as far south as the acacia groves near Ghard Abu Muharrik, roughly 500 km away from their homeland.

*In restlessness, Ghard Abu Muharrik sits atop the Eocene plateau of central Egyptian Sahara. A shallow longitudinal depression cuts through the plateau from north to south, wherein, the dune-belt of Abu Muharrik*



fills the hollows, creeps over hillocks and covers a rugged limestone country of some 2500 sq.km. Muharrik comes from the Arabic word 'haraka' meaning movement, and so, it is the dune-belt that moves. Meanwhile, some refer the name to the village of Mahareeq in northern Kharga which could also be true. For 350km, Abu Muharrik -- the longest dune-belt in the Libyan Desert, and probably in the whole world--, advances in persistence from northeast of Baharia oasis towards the depression of Kharga in the south. Dr. John Ball who had surveyed Abu Muharrik in the 1920's, recorded that the dunes creep some 10m. per year. History has brought to our intelligence that the dune didn't reach Kharga by the time of Roman occupation. However, those dunes have now become a major feature in Kharga, stretching south for as long as 150km. on the depression's floor, whence, a calculation was made by Dr. Ball estimating the dune to have taken" 350.000 years to form the way we see it now".\*



A congregation of tamarisks (*Tamarix nilotica*) and reed (*Typha elephantina*) stands on the shoreline of Lake Moghra. Together with the perennial grass (*Panicum turgidum*) and *Juncus* sp., they offer food and shelter to numbers of resident and migrant birds, which in turn play an important role in the local ecology. According to Bedouin herders; these birds drawn a healthy population of peregrine falcons.

Camels seldom lose their way, however, they sometimes get stuck in the salt marshes and become totally immobilized. Unless rescued immediately, their fate is written.

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\* J. Ball, *Problems of the Libyan Desert*, Geo. Jour. 1927, p. 124.

Nearby watchful crows will land on their heads and gouge out their eyes and wait for them to die.

Occasionally, camels find water where they graze so there they remain until their owner comes to collect them. His task is not easy though Bedouin herders can usually predict their camels' whereabouts. They know their own camels' footprints and also know each other's camels. So it is common that a Bedouin herder will mark the places where he saw someone else's camels while tracing his own, and report to the other owners later on.

We came across Bedouin shepherds in several places that year. We saw people and flocks in places like Arag, Nuweimisa, Ain Tabaghbagh in southern Qattara and at Girba to the northwest of Siwa. As is the custom in the desert, we exchanged or gave away surplus goods; tea and sugar were in demand that year. Over a cup of tea, we would learn about local customs, recent events, and environmental conditions. In many places, such as Sitra, Watia and Shayata, we saw Bedouin burning old palm groves to give way to the younger plants. The smoke would rise high in the clear sky, a sign of someone's presence in the usually deserted wilderness.

### **Inside Qattara**

We drove west sloping gently towards Qattara's bottom. Bedouin shepherds were descending the scarp towards Moghra. They trek for three days and nights to graze their livestock at Moghra's permanent greenery.

Our route paralleled the southern edge of Qattara. The atmosphere was onerous. There seemed no life at all. The dunes that bound Moghra in the south faded and gave way to a gaping gravelly plain. Without interruption Qattara began to slope downwards to an average depth of 50 m below sea-level. We negotiated patches of soft sand and occasionally slid into clayey basins. The northern cliffs stretched like a solid curtain from east to west. High, steep, unbroken. We could not approach them because the ground between our trail and the foot of the cliffs is covered by the swelling salt marshes which the Bedouin call *sabakha*.

Camouflaged by sand and season, the sabakha stretch along the total length of Qattara, like a petrified lake. Their width varies between 10 and 20 kilometers in the east, but as we advanced westwards, they would separate us from the cliffs by up to 50 kilometers. Underneath their fragile salty crust, they consist of water and bog. A car or even a camel will sink deeply in them.

Our enemies were no longer an Italian or British gun, but the very land we must drive across. Crossing Qattara is like dancing ballet on a minefield. Every step involves risk. And mistakes are certain to occur. If discovered too late, they can be fatal.

The salt marshes -- covering one quarter of the depression's surface -- change their shape, color and density with the season. Some can be driven over during one season but not another. Like amoebas, they extend and shrink their tentacles in different directions. And in many places there is no absolutely reliable way of differentiating the surface of the sabakha from the surrounding sands.

With only two, far apart, passages through the northern walls and one trail across the depression, sinking in one of the marshes is a terrifying expectation. Worst of all, we all knew that at one point or another we would have to pass westwards through the sabakha. There was no way around it.



*A silhouette of Talh al-Fawakhir, the acacia groves in northwest Qattara.*

Qattara's maximum length is nearly 300 km from east to west and 140 km from north to south. Only one route safely penetrates the interior of the depression, Masrab al-Mehashas, the revealed way out. Devoid of water, this trail is no longer revealed, but lies a few inches beneath the blown sands. It is the only way towards the center of the depression and the soul connection between Moghra and Qara, east and west. The sabakha which parallel it from the north stretched devious arms towards our route in many places.



There was nothing to make us feel we were moving but the fading escarpment to the north. After a full day of driving, the topography finally changed and broke the monotony. The terrain became rocky and we crossed a series of arid valleys cut by running water from the south. Perhaps the most striking feature in this part of Qattara were the playa deposits that indicate the presence of a once large water surface. These mounds of piled sandstone, siltstone and shale occupy large areas of Qattara. Behind them were accumulations of whaleback dunes and seifs stretching towards the southeast. By dusk we climbed over and crossed the few dunes of Ghorud al-Fors, one of two dune-belts in central Qattara. In fact, there are four major dune-belts in Qattara. Al-Fors and Badr al-Din occupy the center of the depression, and further southwest lies al-Ghard al-Kebir, the Great Dune, followed by the impassable dune-country of al-Ghorud al-Soud, the Black Dunes.



From this point on, the south is blocked by masses of impassable dunes. In west and southwest Qattara, the depression reaches its maximum width and dips to an average 100 m below sea level. The sabakha that was restricted to the northern parts of the depression in the east penetrates southwards to embrace the piled soft sands here. Masrab al-Mehashas crosses right over it, through an extremely narrow 10km-long pass called al-Qenitra.



During their occupation of Egypt, the British marked Mehashas by benzene containers that were later collected by the Bedouin. They also scavenged the wooden poles that once supported the only telegraph line that connected the Mersa Matruh headquarters with the Baharia, Qara and Siwa oases. Known to army patrols as the Telegraph Road, this passageway runs through a 35km-long stretch of sabakha from Ras Qattara in the north to meet with Mehashas in central Qattara. It can only be crossed in summer when the sabakha is hard enough to carry a speeding light car.

In the sixties, the Egyptian Army Patrol marked the fading Mehashas with barrels. The barrels were placed 2 km apart - - with the easy visibility of the open desert one can spot up to three barrels in a row -- particularly in those areas where it crossed through the sabakha. Like Bagnold's petrol cans, these

barrels marked a critical passageway. Today these barrels are nowhere to be found and we had to venture into the sabakha depending solely on Mestekawi's judgment.



*Astray from its original route over the Sinai, a white stork suffers the blasts of Rih Bu Muraiqiq in southern Qattara.*

The northern scarp had long disappeared. Mirage overwhelmed our convoy as we navigated towards Ain Qifar. The sabakha hissed like a poisonous snake as the wheels broke the top layer of crust. We kept a distance of 2 km between each car to avoid rushing into the bog-like sabakha with the whole convoy. We could see the leading car like a tiny black spot in the distance, not knowing if it was moving or not. We drove at high speed to overcome this ten-kilometer stretch. The land varied in color rapidly; we passed over white, brown and rose colored cracked surfaces. But our eyes were mainly watching the leading car while our ears were full of the sibilant sabakha, a sound like the Velcro of driving on wet asphalt.

Any track would look inviting in such loneliness. All those who have faced death in Qattara made similar mistakes. It starts with an accidental loss of the main and only trail. Instead of sticking to the original direction and returning to Mehashas, lost travelers start to follow any track they find. They usually realize that they have been drifting in the wrong direction too late. With un-experienced desert travelers, correction is slow for perplexity and then panic usually come first. Confusion

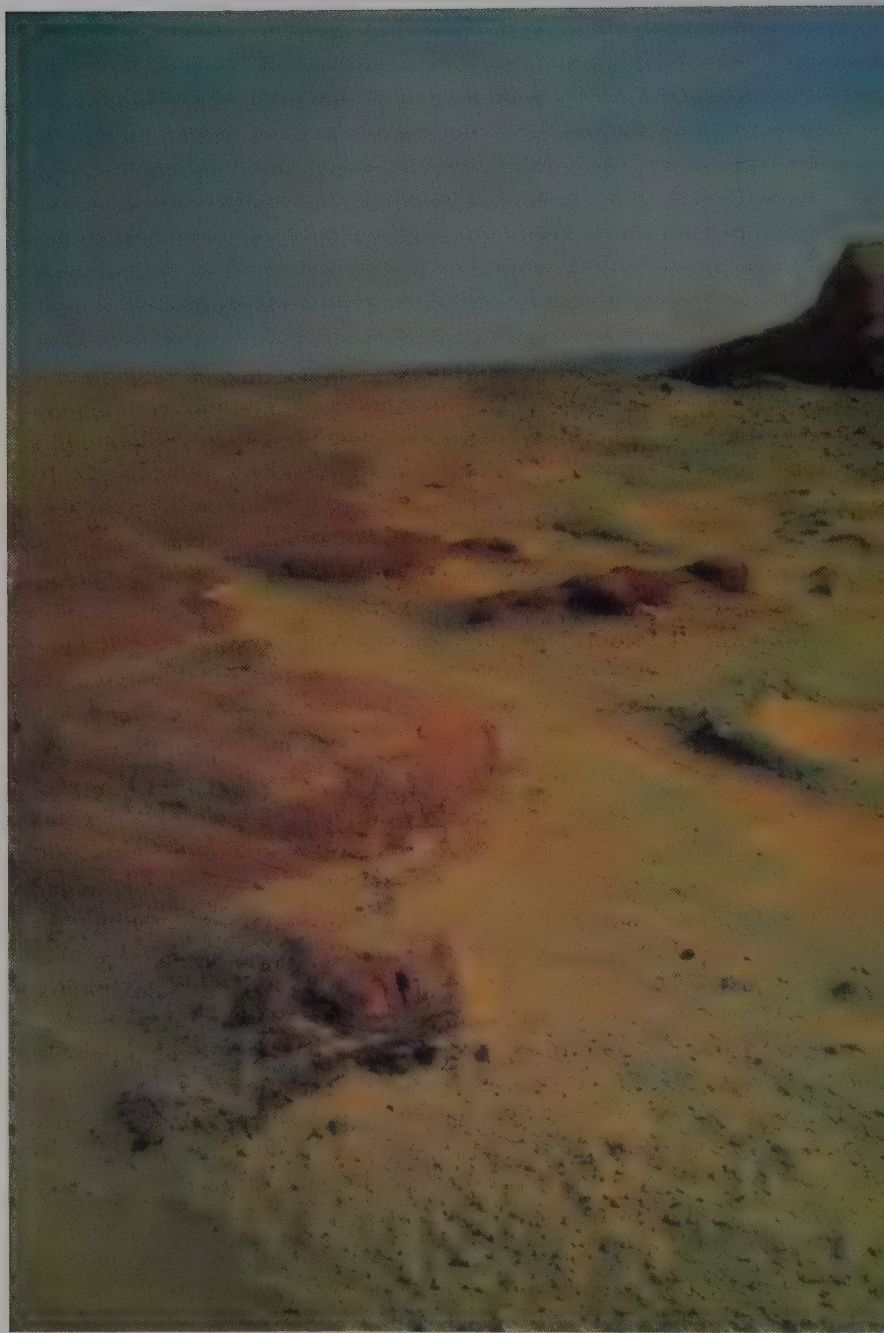
then turns the desert into an unsightly place. Suddenly all the surroundings begin to look the same. Landmarks like a hill or a scarp might be there at the distance, but terrified eyes are usually blind, seeing only that fuel is decreasing rapidly. Commonly, the next step is to attempt a short cut out of the depression. The sabakha awaits just such mistake.

In the 1980's, Mestekawi went searching for lost tourists who had ventured into Qattara with a VW bus. "I found one of them trapped in the sabakha not far from the main track. They just couldn't see it. A woman was still alive but the rest of them - - four persons -- were found dead near Ain Hussein two days later." She was found because she refused to walk. It is much easier to locate a car than a person in the middle of this haystack.

We were exactly in the center of the giant depression. The sabakha separated us from the only source of water at Ras Qattara, while a mass of sand dunes blocked us from the nearest route to Siwa, and the unbroken cliffs isolated all of this and us from the rest of the world.

Approximately 50 km from Cicely Hill an amazing growth of vegetation appeared. "The Russians searched for oil in this area in the early seventies and found this well instead," Mestekawi told us. The drinkable hot water from the well at Ain Qifar comes from a depth of some 1000 m, reddish in color and very warm near the source. The spot was a clear example of Qattara's fertility. Once the water is out, buried seeds come to live. We stumbled across three dry lakes here, around which the expedition's botanist recorded 16 plant species in excellent condition.

"About 15 years ago, a Bedouin named Hadj Mastour collected, by himself, the army barrels that marked Masrab al-Mehashas to build a fence around his farm at Ain Qifar," recalled Mestikawi. How much time and effort did he spend just collecting all those barrels?" As the water from the spring bubbled up, it filled two shallow basins in which Mastour planted fish. His fish farming was such a success that the Matruh governorate subsidized it by sending him cattle and goats."



*The play of colors is a fantasy across the sweeping plains of Qattara. A secret of perpetual motion; a variegation of tans, grays, browns and rusts shifting into copper greens and pastels as the sun moves and the light changes.*





"Hadj Mastour had useful ideas though they always sounded unbelievable. Can you imagine yourself in a boat in the middle of a fresh water lake in central Qattara? And doing what? Fishing for Bouri *Gray Mullet*," recalled Mestekawi.

Nothing remained of Mastour's project, but it neither a dream nor another Qattaran mirage. The rusty barrels surrounding the dry lake are there, although Hadj Mastour had died several years earlier. There, in the center of the depression his heritage remained: a fence of barrels surrounding nothing but sand and a sun-burned fishing boat half buried in the dry lake. All this was engulfed in the haze of Qattara's plain.

### **The Land Above Qattara**

To paint ourselves a complete portrait of the region, we traversed the desert above the depression. Beyond the cliffs that bound Qattara from the north or west, the landscape differs entirely; no sabakha, no towering cliffs and no sand dunes. Just a few meters away from Qattara's edge, the ground starts to slide gently towards the Mediterranean. This is the limestone Diffa plateau, the northernmost of Egypt's table-lands.

Benefiting from the nearby sea moisture, Diffa is a semi-dry region with greenery becoming more dense towards the north. Like Mehashas in Qattara, Metsallib is the only trail that cuts through Diffa from east to west, running parallel to Qattara's curving escarpment for 350 km. At times it drifted north of Qattara's edge to avoid an impassable lattice of hollows. Its name, derived from the Arabic word *salb*, meaning hard or rough. Thus, it has always been avoided by caravans that usually trekked further north along the sandy Mediterranean coast. We traveled across Metsallib in four days, from Naqb Abu Dweis to the Qara oasis. The trail was rugged and the cars suffered tremendously from the long stretches of broken limestone and powdery clay. In reality, the track exists only as a line on the map. Although accurate, it was difficult to detect it at many points for the running water of the occasional rainfall cut through the plateau's surface, making our traveling through this fractured waste a bitter experience the more we advanced.

Near Qattara, the Diffa plateau's surface is bored by innumerable minor depressions called diour. Like shallow basins, they are depressed surfaces a few meters below the surrounding tableland. Their name comes from *deir* meaning circle. They act as water-catchment areas where rain collects to form shallow lakes. Animals come to drink from the diour after rain and temporary gardens flourish around them. At such times, the diour offer an idyllic refuge for the Sahara's last promising gazelle population. When they dry, the Bedouin inhabiting the coastal-desert come to collect the reddish mud for pottery.



*The wind died as the sun set and dusk came slowly. Younis collected some roots from the scattered dry plants. He lit a fire to make a center, a focus that structures and diminishes the vastness. One by one we gathered around the flames. We squatted and stared at its core that created a circle of intimacy in the wilderness. A fire provides not only a sense of warmth but seems to reduce the open desert to a manageable size.*

Two diour are seldom connected though we found some very close to each other in several places. We descended into them reluctantly and only when there was no other way around. We would risk only one car to guarantee a way out on the other side. The thick blanket of powdery clay that covered their surfaces made driving even at low gear a boiling struggle for our engines. Occasionally, a steep, barren diour wall left us stranded until we managed our way through by finesse or force. The diour we came across varied in diameter between one and four kilometers. The plants in them were mostly dry. And we found some tools of Neolithic man near Naqb Abdel Hadi.

Three passages branch southwards from Metsallib and drop 250 meters into Qattara. The easternmost passage is a one-way, downward, camel pass that lies 45 km west of Naqb Abu Dweis. Some 100 km westwards, amid a maze of hills, hides the steep canyon breach of Naqb Ras Qattara, at the foot of which, a spring flow and a dense cluster of palm trees grow. In the northwestern corner of Qattara, a sand drift covers the fallen rocks, allowing a careful driver through Abdel Nabi Pass, which was discovered by Mestekawi while chasing Libyan traffickers in 1982.

To the north of Minqar Abdel Nabi rises Alexander's Hill. Legend has it that when Alexander the Great lost his way to the Siwa oasis, he climbed this triple peaked chalky hill in hope of locating the oasis. From its top, he must have seen, like us, nothing but desert in every direction. Tradition stretches reality even further, professing that two crows glided above Alexander's head before flying towards the southwest. When Alexander and his small army followed them, they arrived to Siwa three days later.

A few scattered acacia trees soften the harshness of the surrounding desert of al-Wesseyia. Farther north, an open and inviting plain is called al-Hemaim, one of the desert's endless traps. Covered by a thick layer of powdered-clay, al-Hemaim is avoided even by the lightest camel. There, a car would sink deeply and there is no chance of crossing it into any direction. Many World War's vehicles were trapped and many souls have perished in this area. Towards the Mediterranean, the terrain is rough with fading trails winding up and down and round low hills which are covered with marine fossils. The country is dry and parched, except during a month or two immediately after the rains. This whole desert between Qattara and the Mediterranean ends by the high rocky scarp of al-Taref that runs parallel to the sea.

Legends claim that Abdel Malek Ibn Marwan, the fifth Omayyad Caliph, made an excursion to this desert in the eighth century. He discovered a ruined city and "a tree that bore every known fruit." As he returned to Old Cairo, he was told by some Copt that the city contained much treasure, so he sent another expedition to that region, but they failed to rediscover the place.



"On another occasion an Arab was journeying near Siwa and suddenly saw a loaded camel disappear into a deep, rocky valley in the middle of the desert. He followed it and arrived at an oasis watered by a spring where there were people cultivating the land. 'They had never seen a stranger before,' he returned to Egypt and reported. [The ruler] immediately sent out men to visit this oasis, but, as usual, they never found it."\*



### Map of the Western Desert of Egypt,

showing routes of the 1996 Expedition (.....) and the 1997 Expedition (—).

- |                    |                  |
|--------------------|------------------|
| ① Alexander's Hill | ④ Ghorud el-Soud |
| ② To Siwa          | ⑤ Alam el-Ghard  |
| ③ Tabaghbagh       | ⑥ Wadi el-Rayyan |

\* C. Dalrymple Belgrave, *Siwa*, 1925, P.92.

## **Qaret Um al-Sagheir**

At the extreme western end of Qattara, there is a hidden oasis. Its name comes from the Arabic word 'qara' meaning hill. After nearly a week of travel, we reached the Small Hill oasis, Qaret Um al-Sagheir. Unlike the other oases that were renamed several times throughout history, Qara is the only recorded name for this little-known and hard-to-reach oasis.

Like pincers, the cliffs above the tiny oasis encircle it and extend eastwards into Qattara, isolating the tiny settlement -- except for a narrow passageway -- from the rest the giant depression. Some consider Qara an independent depression attached to Qattara, just like Moghra on its other tip. Yet, this would not bring it any closer to the outside world. Qara consists of a little group of gardens, a stretch of sabakha and a few thousands date palms. Amidst these groves, a number of sand-colored hills crop like small rocks strewn on a carpet of green.

Qara was originally the name for the bulky mushroom-like rock that squats on this oasis. On its tilted cap rests a fortress built long ago. People lived up there for centuries, believing that the height of the rock would protect them from the raiders who frequently robbed the neighboring oases. But Qara never faced a real external threat for it was always poor. The oasis' only tangible significance stemmed from its location on the caravan route that once connected Siwa to the Mediterranean and the Nile valley.

Early European travelers described Qara as a suburban oasis of Siwa.\* In reality, however, Qara's inhabitants were isolated even from Siwans who seldom venture to Qara's harsh natural conditions. The only economy Qarans have ever known is trading dates, their only concrete link to civilization.

Until today, the arrival of strangers is an occasion that almost every man in the oasis attends. Upon our arrival, dark-skinned people appeared from everywhere and from nowhere one would expect. We were told that "no outsider had come to Qara for eight months."

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\* *D. Belgrave, Siwa, 1925, pp. 181-82.*



*Inhospitable for most men, the remote, encircled oasis depression of Qara shelters a clan of some 300 people--last of the desert's tribesmen to accept isolation. Of Berber origin, the Qarans, like their cousins in Siwa, represent the only Saharan culture in the deserts of Egypt. Among themselves, the people of Qara speak a Berber language. More than half of their vocabulary is of Semitic origin. Arabic words were fitted into Berber syntax and grammatical structure by the mid nineteenth century.*

*At the present time, nearly all the Berber of Egypt can converse in Arabic. In absolute isolation, they intermarry, worship, collect salt and tend their palm groves. Trading dates is their only link to the outside world. Their lives consist of a ceaseless battle against desert harshness: They endure prolonged droughts with summer temperatures that reach 50 C (122 F) as well as sudden, violent floods that devastate the oasis every decade or two.*

The gate of the guest house squeaked open and the Qara's leaders invited us in. Inside, the madiafa consisted of a single newly-built room. The floor was carpeted with straw mats and cushions were arranged in lines against the embellished walls. As a custom, we attended a simple reception and drank tea. When tea was served, we were handed a metal box with sugar in it; the box was a rusty World War II German explosives' case. We also received a gift of dates and peanuts, the only material goods Qarans could offer their guests. Afterwards, we, like other visitors before us, were requested to write a few words in a well-preserved green book addressed to the people of Qara.

The ancient history of Qara is obscure, and its inhabitants' origin has been forgotten even by their eldest sheikhs. As far as they remember, the people of Qara descend from a branch of al-Hamodat tribe -- a mixture of Morabiteen Arabs, Berber and Sudanese.

We were introduced to Sheikh Mahdi, the Chief of Qara, who inherited his title and its responsibility from his father, Mahdi the Great. Hadj Hussein, the oasis' spokesman, was sixty years old and dressed according to their traditions, in a white galabiya and an elegantly embroidered blue vest. On his head he wore a crimson skull cap like those of some tribes in Tunisia and Libya. Most of the other men who arrived one after another looked like brothers or cousins. As a result of isolation, the people intermarry with the exception of a few who married women from Siwa.

The Qarans abandoned their historical dwellings after a deluge that struck the oasis in 1986. Rain may cease for twenty years here, but when it comes Qara is flooded by violent streams that destroy houses and uproot trees, transforming the oasis into a muddy swamp. The catastrophe of the last flood will not soon be forgotten. "It was a sudden rainfall that stormed the oasis for a day or so. Most of the fortress' ceilings collapsed and the ground cracked in many places, forming natural graves that swallowed both property and a number of terrified souls. The flood came immediately after, like a charging army. Carrying large boulders from the surrounding highlands, it



carried away all that was around the rock and filled the graves with clay and mud." Since then -- for the last 12 years -- the people of Qara have not seen a single drop of rain.



They depend on their ancient wells to cultivate their semi-fertile ground. But they drink from Ain Qifar's water which is brought in weekly from 90 kilometers away. Before the well's discovery in the seventies, they drank the brackish water from the 17 Roman wells. Indeed, the scene at Qara could have been as ancient as the Romans themselves. Here, only the slightest details betrayed the encroachment of the modern world on the timelessness of desert life.



Early travelers told many tall tales about Qara. "...A famous religious sheikh called Abdel Sayed was traveling from Tripoli to join the pilgrim caravan at Cairo. He had brought a few attendants and some devout men who were also on their way to do the pilgrimage. When they halted at Qara, the inhabitants, instead of feeling honored and entertaining the travelers, came out of the town and attacked them. The sheikh and his followers managed to escape, and when they were safely out of the valley the venerable Abdel Sayed stood on a rock and solemnly cursed the people of Qara, swearing that there should never be more than forty men alive in the village at once. Since then, although the total number of inhabitants is over a hundred, there have never been more than forty full-grown men. When the number exceeds forty, one of them dies."\* In other stories it has been claimed that the number was 120. I learned that 330 people live in Qara today.

Tracing the early travelers and caravans between Siwa and Qara is a one-day-journey by car. I was told that it took three days by camel in the old days. The caravan and early travelers used the one route between the two oases. This route leaves Qara to the southwest and climbs abruptly through al-Rahheya, the rocky desert. There are two steps to be climbed before turning into a westerly direction across an open desert that stretches for some 60 kilometers. Up there, in all directions, there is nothing to see but a faint straight horizon. One feels as if the table-land is endless, but all of a sudden, the flat desert ceases and one finds himself looking down from a height of some 100 m at a wide valley stretching south towards another infinite desert. The route descends the scarp through a passage named after the Madjabra tribe, Naqb al-Madjabra, where a solitary room shelters a couple of lost Frontiers soldiers reporting on emptiness.

The valley below, which turned to host a moderate population of plants and gazelles, runs south-southwestwards. This waterway, called Wadi Um Hueimil, slopes down gently into Siwa oasis. Nothing is left to narrate the early caravans' history through this stretch of country and the rare rain storms erased all the ancient tracks. As the edging cliffs clearly marked the route, even the typical caravan stone-markers are non-existent.

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\* *D. Belgrave, Siwa, 1923, p. 180.*

I was invited to walk through the fortress of Qaret Um al-Sagheir. The ancient city has only one gate which faces south. All its windows open to the inside. All the corridors, half choked with fallen stones, lead to a small courtyard into which all the doors and windows open. Everything was small and rectangular or square. Perhaps a maximum of 200 people could have lived in that tiny place. The people of Qara believe that their ancestors built the mushroom-rock fortress at the same time that the Siwans built Shali -- around 1200 A.D. The two fortresses both have walls of clay, supported by stones piled together to form dense ramps. And the rooms of both fortresses are roofed with palm trunks.



*The green-covered slopes of Ain Tabaghbagh. Here, in the southwestern corner of the Qattara depression, water flows from a hidden spring, transforming the rugged hill slopes of Tabaghbagh into a rich 'grass land'. When drought strikes the northern desert, Bedouin come to Tabaghbagh's permanent greenery to graze their livestock. Here, we recorded the region's highest biodiversity.*

As we walked down the ruins, I noticed the results of erosion in the limestone surface of the settlement. Deep hollows and fragile edges bore witness to the catastrophes the people of Qara have faced over time.





*Surrounded by a limestone ridge in the north, dune-lines to the east and steep chalky cliffs in the south and west, Arag hides 30 m below sea-level. From the desert surface, it is completely invisible.*



# THE FORGOTTEN OASES

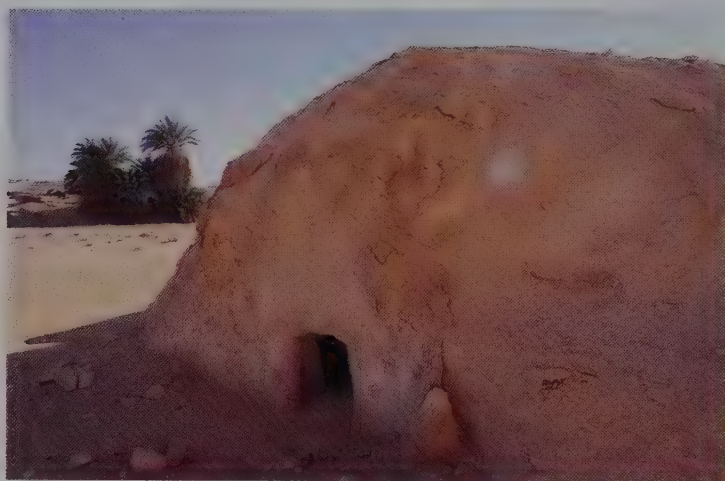
Throughout the 1800s, a group of isolated oases, not far from Qattara, flashed at intervals in the dairies of early travelers. Plodding along the ancient caravan route between Libya and the Nile, travelers -- Bates, Cailliaud, Pacho, Bramley, Rohlf, Steindorff and others -- halted at these oases to rest their camels and replenish their water-skins. They described these spots as uninhabited oases with thousands of palm trees, animals, springs, lakes and a wealth of antiquities. All these islands of green dust lie in small depressions that arch off the southern Qattara like a hidden tail.

Because of poor archaeological methods and lack of sufficient knowledge on the desert's history and geography, archaeologists of those days failed to give any satisfactory interpretation regarding the travelers' notes. Much later, when sophisticated techniques came to the desert, scholarly attention was directed to the major oases -- Siwa, Dakhla, Kharga and Baharia. What lay in-between these fertile lands was basically ignored and what stretched beyond the natives' knowledge was believed to be "the Devil's land." Until today little is known of these isolated oases.

## **Al-Arag**

Arag means to stop, halt or turn from the main route. Surrounded by a limestone ridge in the north, dune-lines to the east and steep chalky cliffs in the south and west, Arag hides 30 m below sea-level. From the desert surface, it is completely invisible. In the middle of the oasis, a pool survives evaporation and sand. Many plants grow around it, including remarkably high palms and tamarisks.

The now seldom-mentioned Arag received considerable attention as early as the 1820's when Cailliaud and Letorzec published their 1826 book, *Voyage a` Meroe*. On his return journey from the Sand Sea, Rohlfs visited Arag in 1874. Attracted by the writings of Von Minutoli and the monograph of Pacho, *Relation d'un voyage dans la Marmarique et la Cyrenaique 1827*, Rohlfs unveiled the archaeological value of Arag and introduced it to the world through his 1875 classic *Drei Monate in der Libyschen Wuste*. However, the oasis -- considerably remote at that time -- was ignored for the next twenty-five years.



*Cave-dwelling in western Arag.*

By the beginning of the 1900s, the name 'Arag' cropped up once more and became associated with Siwa. Travelers and archaeologists added it to their itineraries. Several publications described the antiquities scattered along Darb Siwa, one of them being Arag.

As books like Jennings Bramley's *A Journey to Siwa in Sep. & Oct. 1896*, G. Steindorff's *Durch die Libysche Wuste* (1900), Oric Bates' *The Eastern Libyans* (1914), and Belgrave's *Siwa* (1925) were published, another chance arose to uncover the secrets of Arag and excavate its neighboring oases. But attention shifted once more, this time to the discoveries of Gilf Kebir and Uweinat in Egypt's southern desert.

Arag was forgotten once again, but not for long. In 1936, the *Journal of Egyptian Archaeology* brought back the memory of Arag in an article by Anthony de Cosson titled 'Notes on Bahrein, Nuweimisa and al-Arag.' The subject attracted a young Egyptian archaeologist to whom we are indebted for the brief explanation on its vestigial remains. He excavated Siwa and the neighboring oases for three decades, writing his conclusions in the widely-read *Siwa Oasis* and *The Oases of Baharia and Farafra*. These oases' antiquities were never so thoroughly described before, thanks to Ahmed Fakhry's devoted studies.

Fakhry visited Arag in 1937 to investigate the rock tombs said to exist there. He recorded all his finds and dated the tombs' origins to settlements that occupied the area during the late Ptolemaic and early Roman periods (roughly 100 B.C.-100 A.D.). The estimated forty tombs are secluded in a bay-like corner of the oasis, cut into 15-meter high chalky rocks. All the entrances are either square or rectangular, with dark, empty interiors and low uneven ceilings. There was no clue inside about the lifestyle of the people who inhabited Arag long ago.

The few symbolic paintings decorating the walls consist of unsophisticated drawings of the gods of Egyptian mythology. Anubis -- attendant of the ritual preparation of corpses whose duty was to weigh the heart on the scale of justice and to judge a person's deeds on earth -- is represented in the form of a crouching jackal. Osiris, Prince of the Dead and ruler of the underworld of tombs is portrayed traditionally, as a mummified man wearing a crown of feathers. According to Fakhry and Steindorff, the paintings date to the second century A.D. The other engravings on the walls, totally different in style and content, probably belong to the tomb robbers who excavated a great deal of antiquities in subsequent eras.

As did Fakhry, we searched in vain for the foundation of the circular columns of a temple mentioned by Rohlfs. Nothing but a few skulls, some mummy-cloths and scattered human bones remained. The paved floor with its marble slabs and the bases of the twelve columns were nowhere to be found, probably buried by the sands of time.



*"In a kind of bay in the cliffs [of Arag], between two enormous high rocks, there is a natural terrace, and in the centre of the terrace there are remains of a building ; in the surrounding cliffs, sometimes so high up on the face that one wonders how and why they were made, there are the square entrances of rock tombs or dwellings." (Belgrave 1925).*





## LAKE DISTRICT

Four lakes extend in succession between the dunes of the Great Sand Sea and the southern edges of Qattara. Different one from the other, the oases and salty lakes of Sitra, Nuweimisa and Bahrein stand as primeval landmarks along the ancient caravan routes connecting Siwa to the rest of Egypt. Barriers of limestone separate the oases and divide them into three depressions. Bahrein lies to the west of Nuweimisa, while Sitra lies to the east of both. Sitra, the largest of the lakes, stretches five kilometers east to west and about three kilometers from north to south.

### Sitra

The oasis and lake of Sitra offer a combined ecosystem-structure, territorially enriched to satisfy all interests. Like the other lakes, Sitra dries considerably during the summer months when the water table declines. Due to extensive evaporation, the dark red bottom of the lake is occasionally exposed during these months. Furthermore, as the rate of evaporation increases, salt marshes form. The question remains why have lakes such as Sitra, Nuweimisa and Bahrein not dried up long ago? Dr. Ball, Chief of the Survey of Egypt in the 1920s, posed the same questions some 70 years ago. We still have no answer to his question or for the mystery of where the water comes from in the first place.

In the July 1927 issue of the *Geographical Journal*, Ball wrote: "The total area of the lakes...is nearly 20 sq. Km.(?), and that of the salt marshes is not less than 5000 sq. Km. They are situated in a region which is nearly rainless...doutless less than the annual amount of Siwa which is only a quarter of an inch, the mean daily evaporation ...cannot be less than some 4 mm., which means a lowering in the lake-levels by evaporation of 1.5 m. each year unless there was some inflow to make up for the loss...It appears unlikely that the loss can be entirely made up from local rainfall and by seepage through the northern slopes,...nor can we think that much surface drainage-water from the south ever finds its way into the depressions; for there is an almost complete absence of drainage lines entering them."\*

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\* J. Ball, *Problems of the Libyan Desert*, *Geo. Jour.*, 1927.

Vegetation is absent in the north sector of the Sitra oasis where the ground rises gradually to a low limestone scarp that separates it from neighboring Qattara. Right above, stands a hill, atop which a cairn was built to guide caravans to Sitra's only well. In the south, a dune-field runs parallel to the lake from west to east intersected at intervals by seif dunes running north-south.

To the east, there are a number of small depressions with no lakes. Some are partially filled with sand. The rocks in these depressions, sculpted by wind erosion, look like temples, turbans and pinnacles designed by Gaudi. Some host a considerable amount of plant and wildlife, however, the main concentration of mammals -- mainly White Gazelle -- is around the lakes of Sitra and Nuweimisa.

Aside from its northern section, Sitra is rich in animal and plant life. Many bushy plants separate the dunes from the lake and a cordon of palm trees lines the southern shore of Lake Sitra, protecting it from the drifting sand.

In addition to the familiar animals of the desert's northern latitudes -- crows, jackals, foxes and a variety of small birds -- we once spotted six Flamingos *Phoenicopterus ruber* resting along the lake's shore. They were probably a remnant of a migrating flock on its journey between Eastern Europe and East Africa.

Sand vipers are a common site beneath the half buried palm groves. A long stick is the only safe way to dig out the deadly viper. The Horned Sand Viper (*Cerastes cerastes*) moves sideways and is surprisingly fast on sand. With perfect camouflage for the environment, the Viper, Bedouins say, usually feeds on birds. It buries its body completely, keeping its horns above the sand. When a bird comes to pick up those horns, destiny plays its hand.

The jackals in the neighborhood of Sitra are amazingly vegetarian. Indeed there are no other mammals in the vicinity that they can feed on. And checking their stool, we always found date pips.



*Lake Sitra as seen from the south.*

## **Nuweimisa**

Several pools, rich plant cover and sand dunes form the complete picture of Nuweimisa. On nearing the oasis, a large gray Jackal (*Canis aureus*?) ran off towards the southern dunes, as if it knew by instinct that they are a better hiding spot than the bush when chased by a car. Desert Jackals are common in the northern latitudes of the Egyptian Sahara, and some of the greener regions in the south.

South of Nuweimisa, some hills are exposed among the dunes. Their slopes are blanketed by fossils of all kinds, including shark teeth, fish bones and shells. Like the limestone exposures of northern Sand Sea, those hills are remnants of the ocean that once covered most of the Egyptian Sahara. To the south and east of the dunes, the desert surface is carpeted by nummulite which Bedouin call *Qoroush al-Malayka*, or angels' nickels. There are two passages to cross the dunes that bound the lakes. If not taken, the crossing may be an extremely miserable and dangerous experience. Although the dunes run particularly straight, there are numerous intersected sand-barriers and dozens of crescent-shaped dunes among them.





*The southern shore of Nuweimisa.*

Claims have been made that Nuweimisa was inhabited in the Roman era. "...This keen interest in the desert took place between the first century B.C. and the second century A.D., when projects were started in all the Oases of the Western Desert."\* Today, it is absolutely deserted, except for the millions of mosquitoes that guard this herbaceous island ferociously. In fact, the oasis' name, Nuweimisa, means 'mosquito land'.

### **Al-Bahrein**

Two lakes about five kilometers apart mark al-Bahrein which, incidentally, means two lakes. The low limestone scarp hides the lakes from the main caravan route that connected Siwa with the oasis of Baharia. Caravans traversing this desert have always passed to the north of al-Bahrein, through Sitra, Watia and Arag. The route, known as Darb Siwa, lay 25km north of Bahrein. To the south of the lake, the dunes of Northern Sand Sea rise high in the horizon. Through these sands, an ancient caravan route, seldom used nowadays, crosses over a rough limestone country for about 200km to Ain Dalla and Farafra. To the north, the lakes' shores are stained by different shades of reddish sabakha.

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\* *Ahmed Fakhry, Siwa Oasis. pp. 136-137.*

At Bahrein, "there are tombs cut in the rock of the hills...proof that these small Oases were once inhabited for a long time".\* With broken pottery, human bones and skulls, the area breathes history though it hasn't yet been seriously excavated. It is also believed that caravans crossing the desert between Farafra and Siwa halted at Bahrein. In the shade of the palm groves that stretch along its southern perimeters, we found water-skins, probably forgotten by resting travelers or by the Siwan who, it is said, to come to Bahrein to collect the dates once a year.



The Siwa-Ain Dalla route runs parallel to the eastern limits of the Sand Sea. So close to the dunes, the camel trails sank beneath the sand spray of the frequent gales. At the foot of a gaint seif dune we found the first way marker, a pile of stones or Alam. For a few kilometers the old caravan route followed the direction of the dunes before shifting slightly to the east to avoid basins of liquid sand. The road has long been disused and camel trails were, in most places, completely weathered away. South of Sitra, Nuweimisa and Bahrein and east of the fading trails of Darb Dalla there is nothing but a single dune-line with a gap near its centre. The dune was surveyed by Walpole, the cartographer, in 1928. Having found some relics of an Arab refugee of the Sennusi, Walpole sketched the dune on the otherwise blank map. He called the dune, Fassulet al-Sennusi which until today, sixty years later, is the only inscription found on a map that covers more than 40.000sq/km.

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\* A. Fakhry, *Siwa Oasis*, p. 136.

# RETURN TO THE SAND SEA

Although most of the desert west of the Nile has been charted, the place where Cambyses' great Persian army vanished and the exact location of the Zarzora Oasis remain the Sahara's deepest mysteries. This persistent vision of an army besieged amongst the stormy dunes, with titanic waves of sand breaking on the oasis' white walls gripped my mind whenever I crossed the Great Sand Sea.

The surroundings were arid, pale, desolate. Uneasiness increased my feeling that the universe is only this unbounded sea of sand where nothing exists but the horizon, behind which another wily horizon loomed. It was late one February afternoon when a sandstorm that later beset all of Egypt started to bluster from the west. Our convoy was 200 kilometers south of Siwa, completely isolated in a world without end.

We were crossing the dunes between Siwa and Dalla accompanied by a group of Italian journalists.\* There was nothing we could do in this gale. The desert was showing off and we had to bend. We knew better than to continue at such risk. All we hoped for was shelter from the blowing sand. But like a boat in the ocean there was no refuge but the sand itself.

The air filled with sand and a thick curtain of dust descended from the sky. The sense of 'visibility' was erased from our eyes. The sun was choked behind the sheets of dust and sand. With tremendous difficulty we set up our camp downwind an enormous dune that shrugged off a spray of fine grains from its razor edge. The foreboding ate at us: How long would it last? How strong would it get? When it became difficult to breathe, I secretly prayed for deliverance. Soon after, the night dropped another curtain of darkness over the sand.

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\* An illustrated article on this journey, by E. Salvatori & V. Giannella, is published in *Airone* nature magazine, February, 1997 pp. 66-85.

Restricted to the four square meters of my tent -- which I tied with ropes to the axle of my jeep -- in this vast desert, I lit a candle and watched the shivering flame. And I thought of the perished Persian army. My only companion was Herodotus, the Greek historian and geographer who traveled Egypt in 450 B.C., seventy-five years after the Persians had invaded the country. I read in his History the long related story:

"In the year 525 B.C....Cambyses, on arrival to Thebes en route to Ethiopia, detached a body of 50.000 men with orders to attack the Ammonians [the worshipers of the god Ammon in Siwa], reduce them to slavery, and burn the Oracle of Zeus... The force...set out from Thebes with guides, and reached the town of Oasis [Kharga and Dakhla Oases]... After leaving Oasis, they disappeared; none of that large army ever reached Siwa, and none returned to Oasis or any other place in Egypt."



*Herodotus, father of history.*

There is another account, said to be the version told by the Ammonians themselves, also taken from Herodotus.

"...When the men left Oasis, and their march across the desert had reached a point about midway between it and the Ammonian border, a southerly wind of extreme violence drove the sand over them in heaps as they were taking their mid-day meal, so that they disappeared forever."

Herodotus' record remains the classical and sole source on the incident. Archaeologists are divided. Some think that Herodotus left us a fable, while others accept his account. Desert stories are so interwoven with curious legends and fables that it is almost impossible to separate fact from fiction. I believe that a desert that has lost its mystery is no longer a desert. Thus, I believe in the existence of the legendary oasis of Zarzora and in the presence of the Persian army beneath these sands.

Legends motivate us to explore. They whisper in the desert's silence. This desert language has been understood by scientists, adventurers and the Bedouin, each of whom interpreted it in their own way.



Herodotus mentioned that the Persians were escorted by native guides. Surely, they knew their way through the desert. But why did they choose to advance through the dunes instead of following the safe and known routes? Why would they lead a large army and its beasts through arid regions while water existed elsewhere? Did those natives intend to trap the Persians? Or were they heading towards an oasis that exists no more? Zarzora?

The wind wailed outside and the tent crackled. Would someone come search for us if we get lost to this submerging storm? The Persians remained in Egypt for about 120 years. So why didn't Cambyses or any of his successors send an expedition to trace the lost army? To ignore such a loss is strange. Herodotus said nothing; he sat in silence staring at the shivering flame.

I lost consciousness out of exhaustion. It was six o'clock when I opened my eyes, ending visions of a storm lasting for days. There was no sound outside. The wind seemed to have died down during my sleepless sleep. But I couldn't hear my companions voices. At least we were only one day off schedule. I closed my eyes again.

By seven there was still no sound. The sun usually kindles my tent early. I opened the flap and stepped outside trying to open my eyes. But I couldn't. They were already open but there was nothing to see.

There was no sky, no horizon, nothing at all. Addis emerged all of a sudden out of the suspended dust asking me if I had slept at all. Before I answered he disappeared again. Silence hung like dust as if time had paused.

Mestekawi appeared. I stretched both my arms pointing at our shrunken universe and asked him what was going on. Laughing, he answered "I don't know." We smiled with hearts of gloom. The boots I left outside the tent were half buried and full of sand. Our tracks had completely disappeared. The camp seemed to have been here forever as if it had fallen from space ages ago. We had lost our path to yesterday's reality and weren't interested in the present's dream. Our main concern focused on the future.

It was judgment time. We were lost. Not in place but in a space without time. In such tribulation, eyes meet. Concerned eyes and terrified ones. The former hope for encouragement and the latter seek assurance. But they all search the same refuge, the guide's eyes. There is a thin thread between confidence and fear. Looking into the guide's eyes one could decipher this nuance. And then came the voice to soothe the restless hearts.

Mestekawi spoke to us with gentle firmness: "We cannot proceed in this weather. We shall stay till it clears... The worst storms don't last for more than three days." He drew a map on the sand to show our position. "... We have enough water and food and we know exactly where we are... It's just a matter of time."

As we packed our belongings, to be ready to move at any moment, the air cleared a bit. But soon the wind started to blow again. Sand flew up to a meter above the ground. All around, my companions legs disappeared, their torsos levitated above the sand. We stowed our bags under the cars to protect us from the stinging sand. In that shelter among the four cars Dahish managed to prepare an herbal tea. A wary voice read a poem by Mouloud Mammeri:



"As if, before the nudity of the desert we could only present ourselves in complete nudity."

In the desert, repeating something is like flinging precious water into the sand. We sat, some writing and some waiting, keeping our words and saving our water. Mestekawi interrupted this silence and asked me to follow him. As we got into the car he told me that we should try to make a move.

It was impossible to head into the storm, so we drove a few kilometers east-southeast, the direction of the wind. Visibility was less than fifty meters. On the way back we followed our tracks which had already been erased in many places. We navigated with the GPS, because the sun was still invisible.

By early afternoon, Mestekawi decided to leave this site and attempt to advance a few kilometers eastwards. Dalla was still two days away, totally out of reach, but our move was meant to raise morale rather than cross kilometers.

No one discussed the decision. We understood. It would have been too stressful to camp there another night. Under all circumstances, the guide is to be followed. No matter how sound one's knowledge, the guide leads. Even the Bedouin, the people of the desert, follow and obey their guides unconditionally. When in the wrong, they don't discuss their error immediately. They wait to halt or suggest a rest. Over a cup of tea, they gently correct him. To shake a guide's confidence is a serious matter.



*Col. Ahmed S. Al-Mestekawi*

The four-car convoy moved slowly. Headlights on. We kept the distance between the cars as short as possible, head to tail, like a camel caravan in a desert without references. With eyes wide open we looked at one thing, the car ahead of us. Although it was midday, we were afraid to lose each other in this sea of darkness.





Inside the cars we sat with dusty scarves wrapped around our tired faces. The air suffocated us but opening the windows meant suffering stinging grains. We spoke nothing aloud. Outside the sand flew above the surface, drawing ghostly tails of quartz. They whipped at the car from behind and passed us, rushing towards the car ahead. At times we could only see the top of the leading car as if driving in a shallow dust-colored lake. The stream of air changed direction and the explosive northwestern bursts quickened.

Unlike other winds, the hot sirocco -- the khamaseen or the harmattan -- these howling storm winds produced a severe drop in temperature. Whenever we had to dig a car out of a sand-pool, we put on our goggles and rewrapped the scarves, leaving only a slit to see through. We could not hear each other above the hissing of the blasts. By dusk, we had managed to move 70km with the wind, an average of ten kilometers per hour. That was far more than we could have hoped for.

The weather improved by the following morning and we could see perhaps a kilometer ahead. We crossed several sand-ridges of great height. Their steep --almost vertical -- eastern slopes, which we would normally avoid, forced us into a series of frightening descents. With sandy troughs in-between, one slope followed the other endlessly before we suddenly reached the gravel lanes between the dunes. We hit Pillar Rock by noon. By sunset we reached the Nummulite scarp which separates the dunes from Dalla.

The following morning the Sand Sea -- the territory that the Siwans once called "the land of the unbelievers" -- ejected us from its confines. As the palms of Dalla appeared at a real horizon I remembered the perished army of Cambyses. I felt certain that such a tragedy had taken place. None of those soldiers could have survived. I also thought of Zarzora. How many such storms did it take to completely cover the oasis? Whether or not Zarzora lays hidden like Atlantis, I will always believe in its existence. To find it is to discover oneself and to reach it is to approach perfection. In all my travels, I've learnt a small truth, the first of all truths: Zarzora lies within us.



## Glossary and Appendix

**1. Acacia:** Is a name of a large group of plants related to peas and beans. They thrive in most warm regions. The trees have bright yellow flowers with a sweet odor. The tiny flowers cluster together to form fluffy balls. Most acacias grow sharp thorns that are called cat's-claw.

**2. Agram** = A hearty plant species (*Anabasis*) that includes *Zygophyllum*, *Salsola tetrandra* and *Anabasis articulata*.

**3. Aqaba** = Obstacle or a mountain-road.

**4. Ain** = Water-spring.

**5. Algae:**

Is the simplest kinds of plants.

**6. Annual plant:** A plant which grows, produces seed and then dies within one season (one year).

**7. Ariadne's thread:** In the Greek mythology, Ariadne was the daughter of Minos, the King of Crete. She gave her lover, Theseus, a clew of thread to guide him out of the labyrinth wherein he entered to slay the monster called Minotaur.

**8. Assib** = Critical or difficult

**9. Atmour** = Plain desert or sand sheet.

**10. Bahari**= Northern

**11. Berber:** Historically Berber origins are an impenetrable mystery. One theory is that they were a Celtic-Iberian mixture, who came to North Africa across the Straits of Gibraltar from Spain many thousands years ago; another is that they were originally Phoenician, deriving from Levant (G. Gunther). However, Berber were the earliest known inhabitants of the western Mediterranean coast of Africa. Some believe that they probably lived in this region and the Sahara about 3,000 B.C. or earlier. During the periods of Carthaginian and Roman rule --from 600 B.C. to the A.D. 400's -- Berber traders linked the Mediterranean with the ivory, gold and slave markets of west Africa (K. Perkins). Arab invasion of North Africa began in the 600's. Many Berber converted to Islam and joined with Arabs in conquering Spain. As the Arabs and Berbers withdrew from Spain, they settled along the Mediterranean's southern coast and in the scattered oasis until the present time.

**12. Biome** = An ecosystem that covers a large area of the Earth's surface (a desert for example).

**13. Bir** = Well

**14. Conservation:** Is the wise use of the Earth's resources.

**15. Darb** = Desert-road or camel-trail.

**16. Deir** = A shallow depression encircled by steep walls.

**17. Desertification:** Is a continuous diminution or destruction of the biological potential of the land, a continuous process going through several stages before reaching the final one (deterioration of living conditions and increase of desert-like landscapes) which is an irreversible change.

**18. Ecosystem:** Is a group or community of organisms and the environment which supports them, relating to each other to form an ecological system.

**19. Ethnic group:** A population within a larger community (the Berber in Egypt for example) that is considered set apart from the rest of Egypt's population by different racial and social characteristics, especially language.

**20. Gara** = (See *Qara*)

**21. Garf** = Steep cliff.

**22. Gebel** = Mountain or high hill.

23. **Gorra** = Trace of a car, camel or a person.
24. **Ghard** = Sand dune.
25. **Ghorud** = Sand dunes or a dune-belt.
26. **Gilf** = Escarpment.
27. **Hadaba** = Plateau.
28. **Hamada** = A rocky, broken table-land with steep borders.
29. **Hateya** = An uninhabited vegetated depression
30. **Karkur** = A narrow valley, gorge or a gully.
31. **Kufra Oases**: A group of oases in eastern Libya. The oases were unknown to the outside world until Gerhard Rohlfs, the German adventurer, visited them in 1879. He fixed its position on the map and described the settlements there (Tezerbo, Buzeimah, Talab, Zuruk and al-Taj) as a group of neighboring villages with palm-trees, lakes and flowing springs. He gave it the name of Kebabo, while the original inhabitants of the desert knew it as al-Kufra, meaning the 'Hidden one'. Kufra was inhabited by the Tebu, a Negroid race who roamed the southern tracts of the Libyan Desert in search for grazing grounds, until the arrival of the Arabs. The oasis played a major role by the turn of the century when it gained fame as the Sennusis headquarters. During World War II, the oasis became a base area and a supplying cache for the Italians before its capture by the British.
32. **Masrab** = Way-out or trail
33. **Monkhafad** = Depression
34. **Mehashas** = Transpired or revealed.
35. **Minqar** = Cape or a projected part of a scarp.
36. **Naqb** = A pass between two ground levels
37. **Neolithic Age**: Is the "New Stone Age" that started about 10.000 years ago. The first farming was done during this age. This period also saw the growth of the first settlements.
38. **Niche**: Is the part of an ecosystem in which an organism lives, or the way of life it follows.
39. **Palaeolithic Age**: Is the "Old Stone Age" which ended about 10.000 years ago. Modern man appeared during this period and developed basic tools and weapons.
40. **Pasture**: Is a place where grass grow naturally and provides food for grazing animals.
41. **Pasture rotation**: A movement of grazing animals from one pasture to another to avoid over-grazing, is a technique naturally practiced by camels.
42. **Qibli** = Southern or upper.
43. **Raheyya** = Stony ground
44. **Remal** = Sand or erg.
45. **Sabakha** = Salt marshes
46. **Sakhr** = Rocks
48. **Sand-sheet**: Is an open tract of desert, characterized by its extreme flatness and by the almost entire absence of feature upon its surface, other than a fine ripple.
49. **Shard** = Warm air
50. **Seif** = A longitudinal dune.
51. **Talh** = Acacia trees
52. **Tell** = Mound
53. **Wadi** = A valley or a canyon.
54. **Waha** = An Oasis
55. **Wahat** = Oases
56. **Wesseya** = A vegetated spot amid a barren country.
57. **Xerophyte**: A plant able to grow in dry conditions.



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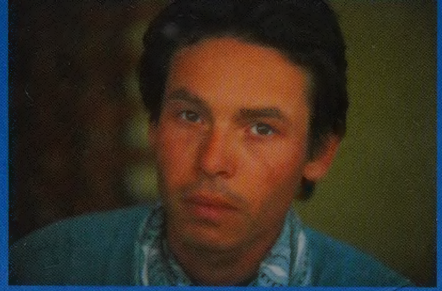
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*The call of the desert, for the thinkers of the city, has always been irresistible: I do not think they find God there, but that they hear more distinctly in the solitude, the living verb that they carry within themselves.*

*T.E. Lawrence*

*Le désert, c'est un apprentissage. Retiens le mot "apprentissage", apprends, tisse, âge. Pour connaître le désert, il faut l'apprendre. Pour l'apprendre, il faut savoir en tisser toute la réalité, et pour faire l'œuvre qui alors lie d'une trame croisée le ciel à la terre, il faut savoir attendre, prendre de l'âge.*

*Un marabout*

*I have always believed that no matter how much science may reveal, the desert will remain in most peoples' minds a place of accumulated sands, unsolved mysteries and eternal legends, all camouflaged beneath a haze of mirage. In this book, I piece together some of that mirage and portray the unexpected appearance.*

*The author*

